JAN. 13 1961

PETROLEUM WEEK

A McGRAW-HILL PUBLICATION

Foreign Sales:

$700-million worth are up for grabs, and U.S. equipment firms are hustling for a share 13

Canada:

A big year is in the making. Look at these forecasts for 1961: Natural Gas, +80%; crude, +5% to +10% . . . 24

Price 50 Cents

- Underwater completion is first in U.S. 14
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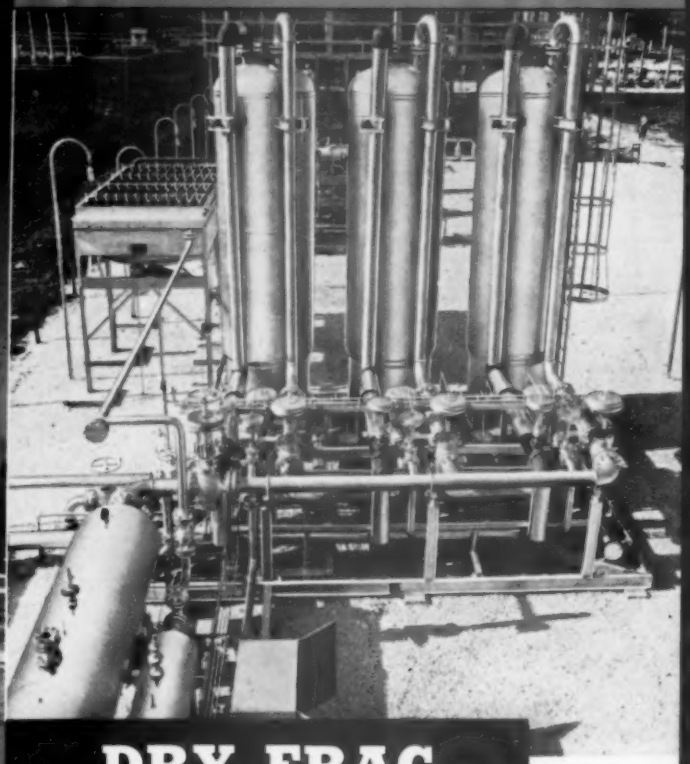
Rich Stream - Lean Stream

COLD FRAC



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Generally, the COLD FRAC process is favored for use on a stream rich in C_5+ hydrocarbons. Variable design factors such as separation temperature, partial stripping of fluid, and balancing of the process to utilize equipment to its maximum capacity greatly affect the economics of this process, but it is not affected to any great degree by inlet temperature.

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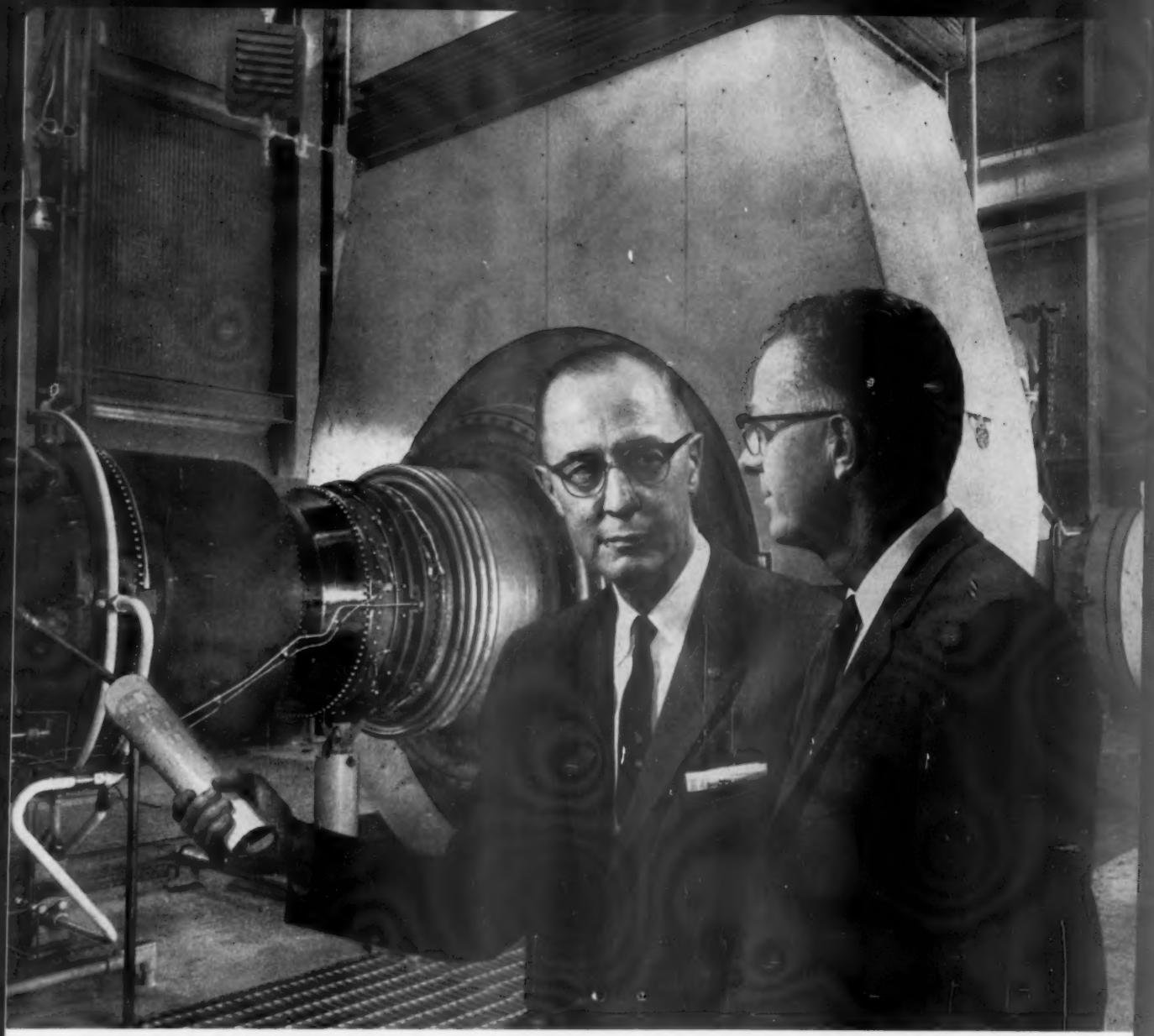

R. L. Boyer, *Vice President and Director of Engineering, and* W. B. Boyum, *Manager of Gas Turbine Sales, The Cooper-Bessemer Corporation report...*

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INSIDE Slant

WHOPPING INVESTMENT

The magnitude of the petroleum industry in the six western states is highlighted in the latest biennial report of the Western Oil & Gas Assn.

Felix Chappellet, vice-president and general manager of the body, reports that oil industry investments in the six states amounted to more than $6.9-billion as of Jan. 1, 1960.

The six states are Alaska, Arizona, California, Nevada, Oregon, and Washington.

The figure is $114-million more than the 1957 total, including the $62.5-million invested in Alaska. The latter is covered for the first time since the biennial studies were begun in 1949.

To get an idea as to what the investment means, take a look at the following:

- 37,676 oil wells, which produced 307.7-million bbl. of oil in 1959.
- 44 refineries, with a total capacity of 1.5-million b/d.
- 7,800 mi. of crude and product lines.
- 181,810 employees.
- 44,506 resale accounts, including bulk plants, service stations, and miscellaneous smaller outlets.
- Salaries and wages totaling $990-million.

LeRoy Menzing
Editor

Congrats and $25 for this quip to M. H. Barber, Continental Oil Co., Big Spring, Texas.

"told him to pack the pump"

Whether it's running casing for surface hole, intermediate string, oil string or tubing . . . Lone Star Steel pipe is the brand Joe Roughneck counts on. Centrally located in the heart of the Mid-Continent oil producing area, Lone Star delivers API electric-weld casing, tubing and line-pipe on the double . . . in quantity! And, you can depend on Lone Star for quality as well as quantity. Our ultra-modern steel mill is equipped with the newest, most efficient tools in the industry. Rigid quality control is maintained from ore to finished product.

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Views Tha

Dear Sir:

I was surprised to read in your "Butane Freezing Makes Seawater Potable" [PW—Dec.16'60,p37], an account of the talk on saline water conversion that I gave at the American Institute of Chemical Engineers meeting, that "says Karnofsky . . . fresh water can be produced for as little as 30¢ per 1,000 gal." I said nothing of the sort; neither can anything I did say possibly be so misconstrued.

GEORGE KARNOFSKY
Manager of development
Blaw-Knox Co.

Dear Sir:

The items in PETROLEUM WEEK [PW—Oct.14'60,p42; Nov.11'60,p84] covering the installation of an Isocracker unit by Standard Oil Co. (Ohio) and the use of the Isocracking process by Tidewater Oil Co. have been reviewed by us with a great deal of interest.

The terms Isocracking and Isocracker are proprietary names of California Research Corp. Accordingly, in any future articles in which these proprietary names are used, it will be greatly appreciated if you would use an initial capital "I" for Isocracking and Isocracker.

We feel certain that you will not construe the above suggestion as a criticism of your excellent items concerning Sohio's Isocracker unit and Tidewater's use of the Isocracking process. We are most appreciative of your identifying Cal Research as the orginator of the Isocracking process.

A. L. SNOW
Vice-president
California Research Corp.

Dear Sir:

Your article, "Standarization Cuts Waterflood Costs" [PW—Dec.16'60, p24], I thought, was very well done.

Through the years I have had some experience with newsmen and journalists. So often it has seemed to me that, despite the fact that great stress was laid on furnishing complete and accurate information to the writer when a story or article was published, there were frequent inaccuracies. It has always seemed to me that the very essence of good reporting and writing was accuracy and verification of facts and details. . . We know your piece is accurate and clearly written.

I shall always remember how well PETROLEUM WEEK handled the article, and should I think something else

Make News

at some other time might furnish the basis of a worthwhile article, you may be sure that I will communicate with you.

CHARLES E. PLUMMER
Executive vice-president
Home-Stake Production Co.

"Chances for any more than an extremely modest advance in drilling rates [in 1961] appear out of the question."

—WARREN L. BAKER
Executive vice-president
American Assn. of Oilwell Drilling Contractors

"We believe that taxes should be uniform in application and not punitive or discriminatory. Thus, income taxes should be restricted to income and not levied on capital. This, for example, is the basis for the depletion provisions of the tax laws—that the discoverer of a natural resource has a capital value which he should be permitted to recover free of income tax in order that he can replace it in the hazardous, costly business of oil and gas exploration. This is also the basis of special rates on appreciation in capital gains; and also the basis for providing in the tax law a dividend-received credit in recognition of the fact that dividends are paid out of corporate earnings that have already been taxed."

—R. G. FOLLIS
Chairman
Standard Oil Co. of California

"The claim that the U.S. is a have-not nation is correct only in the sense that we have not looked for hidden resources with the equipment now at our command."

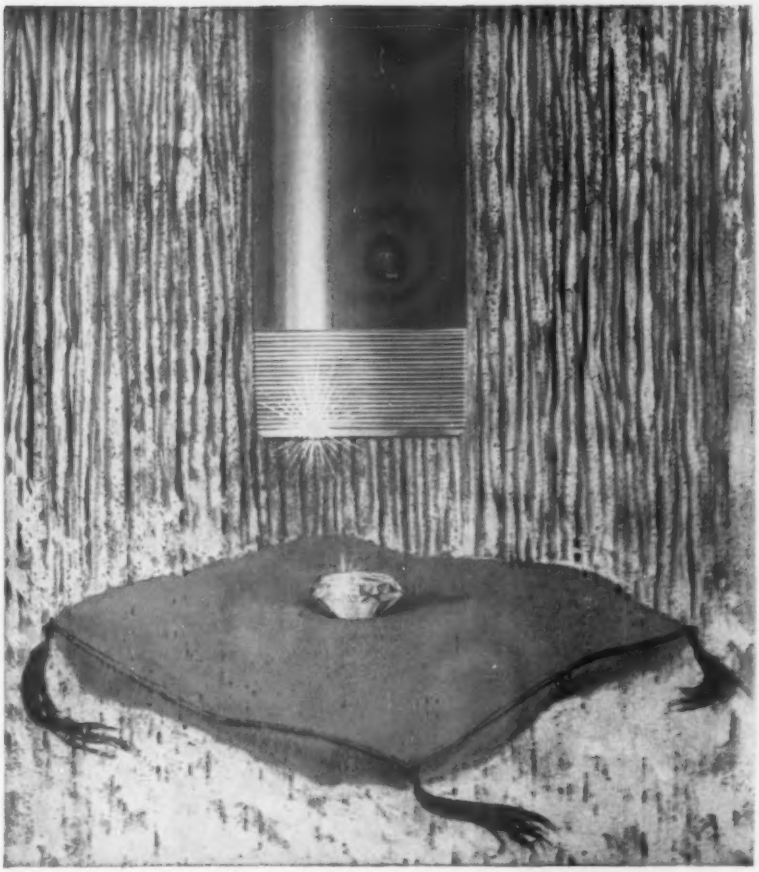
—HOWARD A. MEYERHOFF
Retiring vice-president
American Assn. for the Advancement of Science

"The 'Mohole' [project] reminds me of a Christmas tree: It has something on it for everybody."

—HARRY LADD
U.S. Geological Survey

PETROLEUM WEEK *will publish each week comments from readers on timely, pertinent subjects. Such expressions are welcome.*

Address all such correspondence to LeRoy Menzing Editor, PETROLEUM WEEK, *330 W. 42nd St., New York 36, N.Y.*



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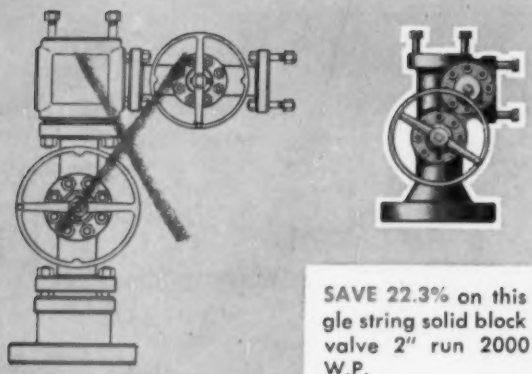

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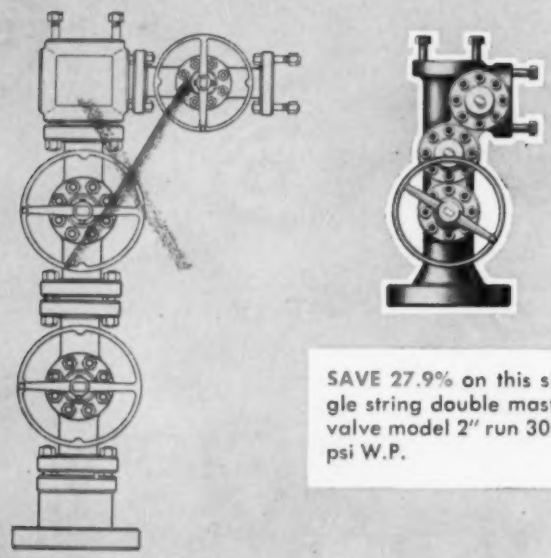

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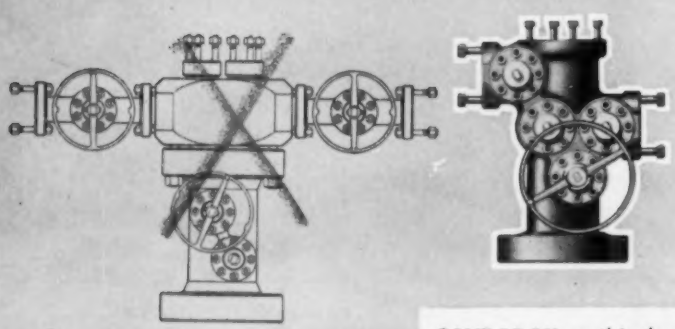

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60-Second Summary / WHAT'S HAPPENING IN OIL

January 13, 1961

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The Kennedy Administration takes office next Friday—but many key Interior appointments are still up in the air. These include an Oil Imports Administrator, an Oil & Gas Director, and an assistant secretary for mineral resources. . . . p. 18

•

Shell Oil Co. has made the first underwater completion in U.S. waters. The special wellhead equipment was placed on the bottom of the Gulf of Mexico—about 35 mi. off the Louisiana coast—without the use of divers or caisson equipment. . . . p. 14

•

Markets, both at home and abroad, took on a rosy hue this week. Oil men agree there hasn't been anything like it since Suez; in fact, some says, it's almost like the good old days. . . . p. 70

•

Canada's petroleum industry is anticipating a better year in 1961 than it had in 1960. Natural gas will be the biggest gainer again, and crude output is expected to rise from 5% to 10% over last year. . . . p. 24

•

Want to pick up some acreage in Libya for exploration purposes? Some 34,000 sq. mi. have been relinquished by oil companies in compliance with Libya's oil law. . . . p. 41

•

The foreign equipment market is luring U.S. suppliers like a beacon light. Some manufacturers estimate that the market is worth about $700-million, and they figure they may be able to bag as much as 28% of it. . . . p. 13

•

Mountain Fuel Supply Co. is bucking the idea that it doesn't pay to automate an old gas line. The Wyoming firm is revamping part of its 31-year-old gas transmission system. . . . p. 49

•

Cost-conscious refiners are campaigning to reduce the great number and variety of branded lubricants. In their opinion, 90% of the brands and variations make up only 10% of the sales volume. . . . p. 54

•

Venezuela is banking heavily on next week's meeting of the Organization of Petroleum Exporting Countries, in Caracas. Oil Minister Juan Perez Alfonzo has a big stake in the outcome. . . . p. 42

•

The market for small-craft fuels is still growing, but it's also getting more complex. It may be necessary for marina operators to stock diesel fuel and kerosine, in addition to three or four varieties of gasolines, to keep everybody happy. . . . p. 62

Up to the Minute / SIGNIFICANT LATE NEWS

January 13, 1961

The actions of oil and coal industry strategists this week on the national fuels policy issue represented a study in contrasts. A Washington meeting of 30 oil representatives disclosed considerable disagreement on what the industry's approach should be. Most seemed to feel that a study will be made, and that oil should offer to cooperate. There was little agreement on the proper scope of the study, and no preference for one conducted by Congress or by the Kennedy Administration.

Coal appealed directly to President-elect Kennedy for support. Stephen F. Dunn, president of the National Coal Assn., urged not only the adoption of a national fuels policy but also restrictions on the use of natural gas for boiler fuel, and tighter curbs on residual fuel oil imports. He said the fuels policy is necessary to eliminate the "unfair practices of coal's competitors."

•

Treasury Secretary-designate Douglas Dillon said at midweek that an "intensive study" of taxes, including percentage depletion, is in order. His views were made at a Senate Finance Committee confirmation hearing. He observed that oil and gas receive "both the highest percentage and the largest benefits in dollars" from depletion provisions. Dillon said that the Kennedy Administration would present its views on depletion by spring.

•

Production from federal-owned offshore areas should be free of "restrictive" regulations, a Shell Oil Co. official said this week. Bouwe Dykstra, New Orleans area vice-president, explained that exploration and development in most of the federal Zone 4 in the Gulf of Mexico will require extremely heavy expenditures. In those deep waters, he added, operators should be required only "to follow good operating procedures and avoid physical waste." Regulatory measures of state conservation agencies are necessary for many reasons onshore which do not apply to offshore regions, he said.

•

Utah's Oil & Gas Conservation Commission has decided on 320-acre spacing for the Lisbon field, San Juan County. Proposals have ranged from 80 to 640 acres.

•

The Canadian government has been urged again to be realistic about the proposed Alberta-Montreal crude pipeline. R. A. Brown, Jr., president of Home Oil Co., Calgary, said the pipeline, rather than the hope of market expansion in the U.S., is the answer to producers' problems. He suggested a $30-million, 34-in. line, and expressed hope that it could be in operation by 1962.

•

Leases on University of Texas lands after next March probably will require one-sixth royalty. Land Commissioner Jerry Sadler indicated that would be true when he set the next sale for Mar. 28. Public school land leases have required one-sixth royalty since 1955, while royalty on University lands has continued at one-eighth.

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Eastman's bulk handling system for Tenamene additives saves refiners a substantial amount of money.

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Of course, not everyone can benefit from Eastman's bulk handling service. It's practical only for refiners whose inhibitor requirements justify modification or replacement of existing drum handling and storage facilities.

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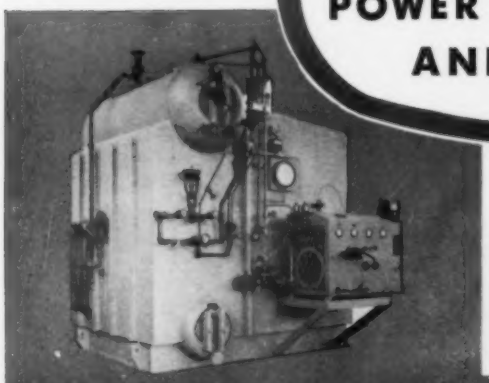

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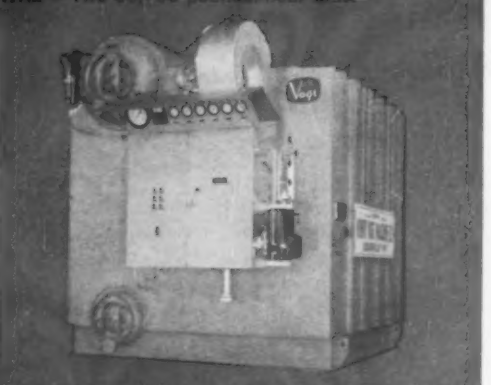

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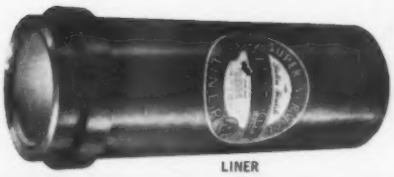
The Mission  Mission

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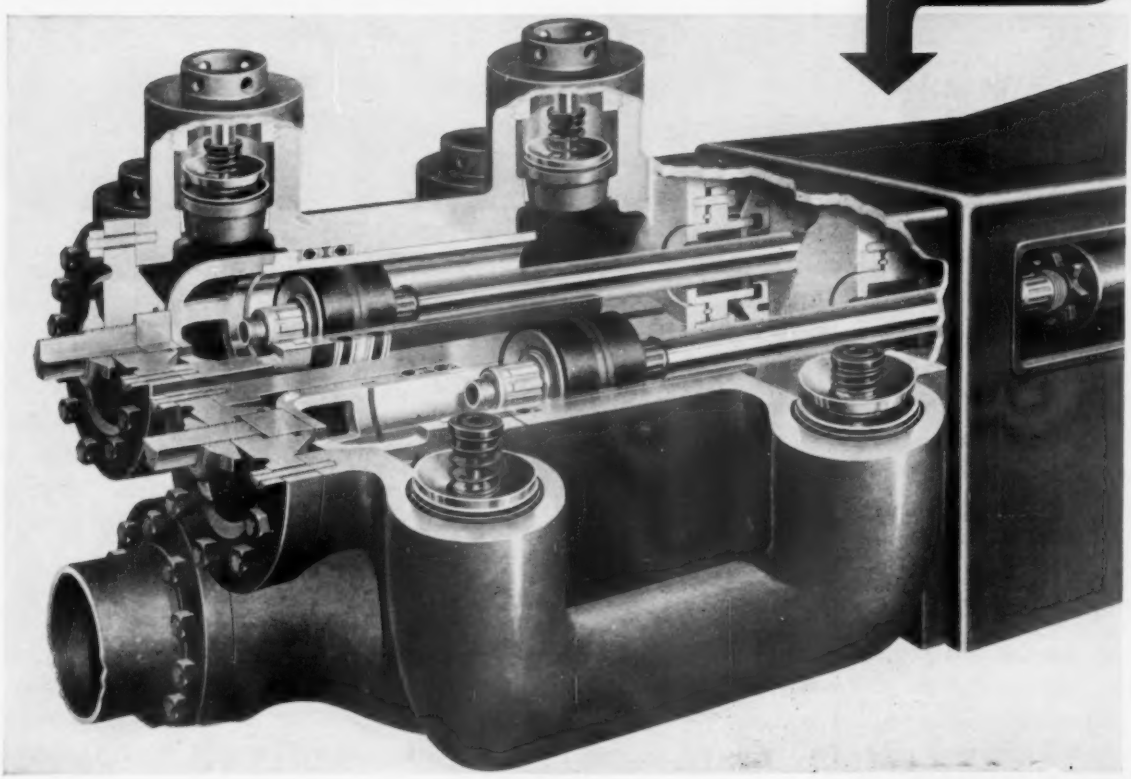

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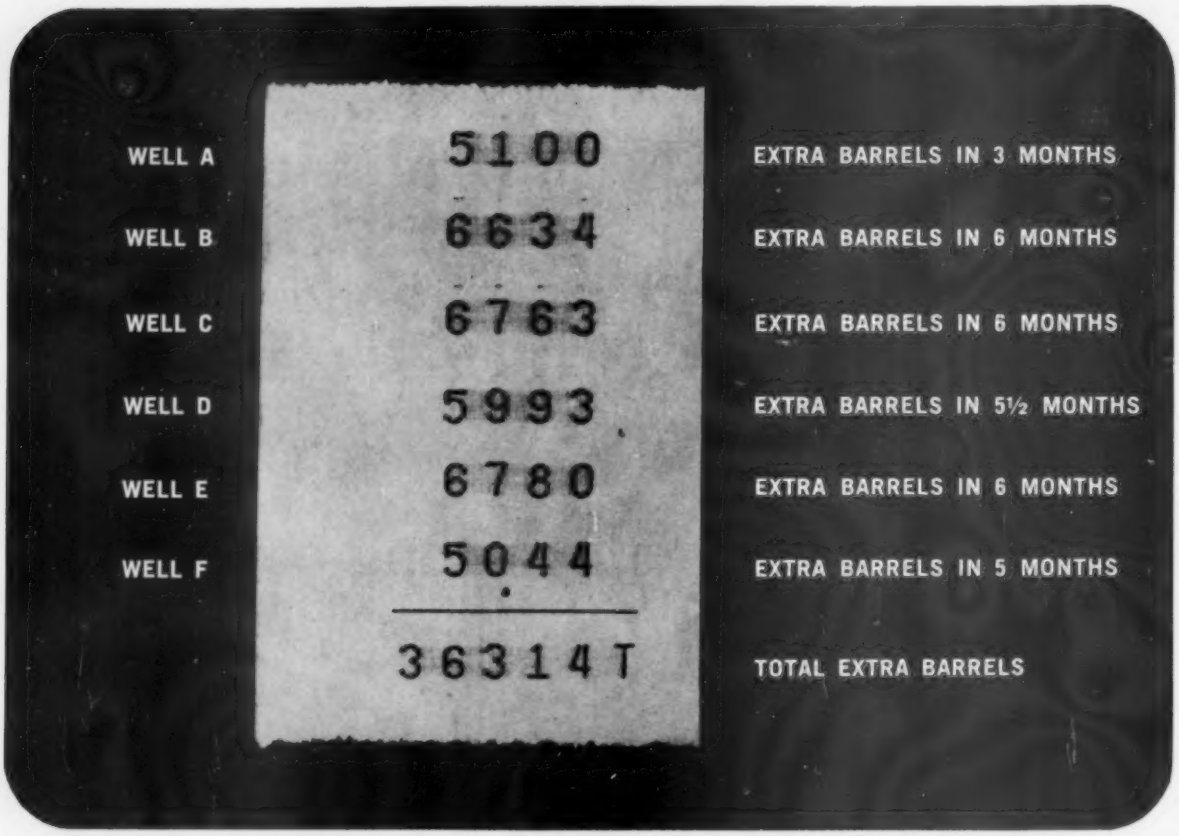
could you use production increases like these?



This operator got 36,314 barrels of extra oil from six wells within six months after they were fractured by Dowell. Total service costs for the six treatments averaged only $2931.79 per well. The extra oil produced during the first six months, as a result of fracturing, cost less than 49 cents per barrel. Additional production after the first six months will be almost clear profit.

All six wells, in Manitoba, Canada, were treated by Dowell at about the same time. All were given similar treatments in which 50,000 pounds of 20-40 mesh sand, at 2-3 pounds per gallon of lease oil, were injected into the pay zone at about 40 bpm. The production gain was determined for each well by comparing total production for equal periods immediately before and after treatment. Production periods were six months for three of the wells. Records for the other three wells covered 5½, 5 and 3 months, both before and after treatment.

Your production problem may be different from the one faced by this operator. The chances are good, however, that Dowell engineers can design a treating program to help you produce more oil at less cost per barrel.

For service or more information . . . call Dowell. Dowell services and products are offered from more than 150 offices and stations in the United States, Canada, Venezuela, Argentina, Germany, France and the Sahara area. Dowell, Tulsa 1, Oklahoma.

SERVICES FOR THE OIL INDUSTRY — DOWELL — DIVISION OF THE DOW CHEMICAL COMPANY

Foreign equipment market:

$700-Million Lures U.S. Suppliers

Some petroleum equipment manufacturers estimate that there's a $700-million market rattling around abroad. And they and their foreign competitors are hot on its trail.

While the general business boom overseas—particularly in Western Europe—is showing signs of flattening out, this is not evident in the brisk pace of petroleum operations.

Just how much of the total equipment market U.S. firms will snare is still a question. Optimists see the U.S. bagging as much as 28% of the business.

Here are typical comments made to PETROLEUM WEEK last week by top executives in the oil equipment industry:

• "Business looks real promising abroad—that's always true when things go sour at home. We anticipate that the foreign boom will go on for the next three to four years, with new refineries, natural gas and crude pipelines, and synthetic ammonia plants going."

• "A boom has shaped up abroad, and we've been enjoying some of it already. Three-quarters of the company's pipeline jobs are outside the U.S."

• "The overseas market for drilling and producing equipment has picked up. We feel that 1961 will be a better year all-round."

U.S. suppliers had pinned their hopes for even higher sales on the easing of credit to foreign government-owned oil companies. But the Commerce Dept. last week flatly turned down their pleas.

A parley between equipment suppliers and government officials early in December on the credit question brought this response from the Commerce Dept.:

"It would not be good policy for the U.S. government to encourage extension of loans—or credit—to foreign governments in their development of oil resources. There is plenty of private capital available . . ."

Rejecting suppliers' requests, Commerce Secretary Frederick H. Mueller warned there is already a glut of world oil supplies.

"I do not think the government should act in a way to further increase supplies needlessly," he said.

Mueller went on to say that it also would be unwise for the U.S. government to extend loans or credit to foreign governments "who have—or who may—expropriate American oil holdings.

"To do this would only be self-defeating, and would go counter to our policies, which favor private development of natural resources."

But many U.S. suppliers and manufacturers still feel that a serious review of the Export-Import Bank policy is in order.

"The current application of this policy on overseas projects," says the vice-president of a large refinery construction firm, "has only resulted in the protection of foreign manufacturers and financial agencies from the competition of American suppliers."

"We were talking to the wrong people," was the reaction among many equipment executives. "Just about all we got was tea and sympathy."

At the meeting, government officials had stressed that they could do nothing.

They did promise to present the equipment suppliers' case in such a way that "it was bound to fall into the hands of the new Secretaries of Commerce and State, and the people actively concerned with the question."

Many equipment people expressed surprise that Mueller had not "passed the problem along to the incoming Kennedy Administration."

Meanwhile, credit or no credit, the foreign market for drilling and pro-

Significant Sidelights

■ **The coal people are readying another sleeper to muster public support for the fuels-policy study which they hope to get through the new Congress. It's a sugar-coated 2½-minute film clip, which they plan to make available to TV stations all over the country, to be used on public service time.**

The idea behind it is to create the impression—however fleeting—that oil and gas are headed for trouble, and that unless something is done quickly to strengthen coal's position, our national security and future economic growth will be jeopardized. The script is slick and fast-moving, and ends up with statement by Joseph E. Moody, president of the National Coal Policy Conference, that our only salvation is a national policy to insure that each fuel can make its "greatest contribution." In other words, end-use controls are needed.

The clip isn't finished yet, but it's in the semifinal stage. And the narrator is one whose long association with historical documentaries undoubtedly will give it a flavor of authenticity and appeal for both TV stations and the public. The project is one that oil and gas men will have to watch for closely—and be ready to alert TV stations to the controversial aspects of this so-called public service film.

duction equipment alone is estimated at $300-million this year, and U.S. firms are after a hefty chunk.

The new growing areas to watch, suppliers say, are Algeria, Libya, Spain and the Spanish Sahara, and Egypt—and operators are eyeing other African areas hungrily.

One major supplier of rigs and components predicts: "With any luck, U.S. companies should capture at least half of the drilling and producing equipment business knocking around overseas.

"But it's hard to nail things down in an industry like ours. A little build-up of inventory in one country can throw the whole picture out of balance."

Refineries are mushrooming abroad. Conservative estimates are that from $100-million to $150-million will be spent on processing equipment in 1961.

Refinery construction and service firms overseas have been doing exceptionally well over the past several years, and there's no let-up in sight.

One large construction firm anticipates that its current projects will require $22.5-million worth of processing equipment.

Much of the refinery equipment—perhaps 70%—will be purchased overseas due to currency restrictions.

But a sizable amount of business will go to licensees of U.S. firms or to outright subsidiaries.

Spectacular growth is expected in synthetic ammonia capacity, the source of fertilizer desperately needed throughout the world—particularly in underdeveloped areas.

Five plants of 350 tons per day each are under consideration in Japan, as are units for 450 tons per day in North Africa. Ammonia developments are also projected in South America.

Bolstering the market, too, are new pipeline facilities overseas. Natural gas, crude, and products lines under consideration may require an additional $130-million in equipment.

Pipeline construction outside of North America will be brisk for the next four or five years.

"The greater part of pipeline construction equipment—rippers, sidebooms, dozer blades—is still purchased from the American market," one spokesman says. "But the U.S. has lost the pipe market—worse, foreign suppliers are exporting pipe to the U.S."

Projected lines so far are preponderantly for crude. "But with crude lines laid to refineries," another pipeline executive notes, "there will be a follow-up of products lines."

Shell Makes First U.S.

The first underwater completion in the U.S.—without the use of surface equipment—has been made by Shell Oil Co. in the Gulf of Mexico.

The industry's first such completion in ocean waters was made off Peru last August by Peruvian Pacific Petroleum Co., a joint venture of Richfield Oil Corp. (L.A.) and Cities Service Petroleum Co. (PW—Aug.26'60,p20).

And just a few weeks ago, Richfield announced it was planning the first underwater completion off the California coast (PW—Dec.30'60,p35).

Richfield also reported that the California completion would be similar to the one made off Peru, but with a few changes in equipment.

There's been no report on the status of the latter attempt since the initial announcement.

From what can be learned so far, however, Shell's Gulf of Mexico completion differs in several significant respects from the Richfield approach. Taken collectively, the ventures indicate that the long-desired breakthrough in ocean-bottom completions is here.

The Shell completion marks the culmination of several years of work by the exploration and production research division of Shell Development Co., Houston.

The company adds that "it is considered a significant step forward in the development of offshore oil and gas fields."

Shell's No. 7 OCS 407, in the West Cameron Block 192 field, was completed in 56 ft. of water, 35 mi. off the Louisiana coast.

The well was completed for 288 b/d of oil, based on 12-hour test. Total depth is 8,300 ft., with 7-in. casing cemented at 8,276 ft.

The Peruvian well was completed in 132 ft. of water, and the planned completion off California will be in water more than 50 ft. deep.

The special wellhead equipment used by Shell was placed on the sea bottom without the use of divers.

The Shell well differs in this respect from the Peruvian and planned California underwater completions, both of which were, or are planned to be, completed using divers.

The wellhead components were made by various manufacturers to Shell specifications.

D. B. Kemball-Cook, Shell's executive vice-president in charge of exploration and production, reports that work proceeded "as planned," though in this instance the work was carried out under winter storm conditions.

The octane guide search:

'Knock Count' Rating Method Can

The industry may be closer to a solution of "building a better mousetrap"—in this case a better guide for octane measurement.

That's one of the indications from this week's annual meeting of the Society of Automotive Engineers held in Detroit.

Processors, particularly, have recognized for a long time that the old motor and research methods are no longer accurate and practical yardsticks for rating modern gasolines.

Also, the methods for measuring both motor and research octanes are inadequate (PW—Dec.2'60,p15).

Consequently, there is a wide margin of error in blending operations, since refiners tend to overblend rather than chance falling below specifications.

Refiners can be penalized in their efforts to satisfy the octane requirements of automobiles efficiently and economically, Earl Bartholomew, director of Ethyl Corp.'s technical staff, told the Detroit meeting.

Existing "tried and true" knock-testing methods do not simulate operating conditions of modern engines satisfactorily.

Present testing methods were established some three decades ago, Bartholomew noted. Since then, broad technological advances have occurred in fuels and engines which have altered previous patterns of engine operation and gasoline performance.

Maximum knock now occurs at a higher average engine speed than years ago, he said.

Moreover, he explained, the radically different chemical composition of gasoline, together with the recent advent of new antiknock compounds, often produce patterns of antiknock quality at different driving speeds that

Underwater Completion

with 10-ft. to 12-ft. seas running at times.

To locate such wells, Shell could use a buoy, or may use some form of sonar device.

A simple signal-emitting instrument could be placed at the wellhead to enable easy location with the sonar equipment.

Shell says details of the techniques and equipment can not be divulged at this time "for competitive reasons." But some conclusions can be drawn.

Shell didn't say just how the equipment was placed without the use of divers, but this, obviously, is one of the key advances in the Shell method. No caisson, or similar equipment, was used.

In addition to the big questions of how the wellhead is constructed and placed without divers, there is the further question of how remedial work will be carried out.

This latter problem apparently has been solved, or minimized. It may involve some kind of special crossover tool to permit periodic circulation of crude through the system to prevent sand buildup.

Shell also may have worked out some method of preventing buildup of paraffin in the tubing, a common problem in the Gulf.

The wellhead itself was placed on the sea bottom by remote control from the conventional bottom-supported platform used to drill the well.

Production functions probably are also controlled remotely.

Shell is attempting another underwater completion in the same area.

It's likely that others will follow quickly, depending somewhat on the availability of the special equipment for such completions.

The special wellhead equipment is said to be more expensive than conventional units, though not significantly so. It is expected to more than pay its way through saving the cost of the well jacket plus needed navigational aids.

The water-depth problem is more acute off the California coast, where the continental shelf dips much more sharply than it does in the Gulf.

But considerable acreage leased in the Gulf is in water more than 200 ft. deep.

The underwater completions could open this acreage to development, though in some deeper waters a practical system for drilling from a floating platform may still have to be devised.

Filter Out False Signals

were unforeseen in the 1930s, when current testing methods came into use.

What could be a step in the right direction is the "knock-count" rating method, which filters out false signals from extra rapid combustion and measures only those pressure vibrations that result from gasoline knock.

The method was described to SAE members by Robert A. Hoffman, research engineer of E. I. du Pont de Nemours & Co.

This knock-detection system uses an improved pick-up to sense cylinder pressure, and new electronic circuitry properly tuned to the frequency of the pressure disturbances accompanying the knock.

With this new detection method, the occurrence of knock can be handled statistically.

From this, Du Pont evolved an octane-rating method based on the percentage of engine cycles during which knock occurs.

Results of tests on various fuels using a single-cylinder engine at standard knock conditions showed that:

- The new device gives octane ratings based on knock, and that these are not affected by the unusually high rates of pressure rise which sometimes accompany nonknocking combustion.
- Repeatability is largely independent of octane level, with successive tests giving identical results for any given fuel.
- Sensitivity of the system is the same for all octane levels—the change in the percent of the engine cycles knocking remains the same for each unit change in octane rating.
- Octane numbers obtained are considerably higher for aromatic fuels, somewhat higher for olefins, and about the same for paraffins, when compared with standard ASTM octane numbers.

Butadiene Used As Starter for Cyclic Products

Cities Service Research & Development Co. has created two new catalysts for making eight-carbon cyclic products from butadiene.

Reacting the four-carbon atom, butadiene, with itself will produce three new commercial chemical intermediates—cyclo-octadiene, cyclo-octene, and cyclo-octane.

These intermediates hold promise of yielding a "host of new products from plastics and nylon to lubricants and paints," according to H. L. Malakoff, vice-president of the research affiliate of Cities Service Co.

The three materials, never before available commercially, are now being produced in pilot-plant quantities, Malakoff says. They are being supplied to manufacturers for product evaluation and development.

He says Cities Service has no plans to enter end-product manufacturing, but will be a supplier of intermediate materials.

Cities Service uses butadiene as a starting material because its molecular make-up provides a natural building block for the desired materials, and because of its availability.

Considerable experimentation has been under way in the field of eight-carbon chemistry, particularly in Germany, Malakoff notes. The most advanced work until now has used acetylene as a starting material.

"This approach was not feasible [in the U.S.]," Malakoff says, "because of reasons of costs, limited output, and processing." He says the development by Cities Service is especially timely because of the abundance of butadiene, which is declining as a source of synthetic rubber.

One of the important building blocks obtainable from the C_8 chemicals is suberic acid, a relatively rare research chemical which could aid in nylon and epoxy-type plastics.

Malakoff says suberic acid can give molded nylon products greater dimensional stability.

Suberic acid could also be applied to the manufacture of epoxy plastics for weather-and wear-resistant coatings.

The high-energy properties of the cyclic C_8 compounds are also being tested. Use of these materials as high-altitude jet fuels would be one of the "boldest" concepts, according to Malakoff.

A Sensible Approach to a 'National' Oil Firm

KUWAIT—Whether Kuwait's new National Petroleum Co. will actually enter foreign refining and marketing eventually—and thus become the first Arab national company to "integrate" overseas—remains to be seen.

Though Kuwait has its normal share of skeptics, there is no doubt that that is what the government has in mind as of now.

"The intention," says an authoritative Kuwait source, "is to develop, step by step, a fully integrated Kuwait company, looking to the date when the oil concessions expire (40 to 65 years from now)."

"We'll start with marketing within Kuwait itself, first," he adds. "Then we'll gradually expand overseas, with Shell's help at least part of the way." (This is provided for in the new Shell concession. See PW—Dec.23'60,p15.)

Here's how another Kuwait official puts it:

"Oil is the sole asset we have in Kuwait. Everything here depends on it, even our drinking water (distilled from the sea). "It's time we stopped being just landlords and tax collectors, and took an active interest in, and role in, oil operations. We must learn something about the business ourselves."

* * * *

If, indeed, Kuwait tackles this venture in the same sensible, businesslike way it is now approaching the issue, it may well stand a good chance of success.

Unlike some other Middle East countries, it is not trying to force various integration theories on existing concessionaires, nor insisting that they enter overseas marketing in competition with their parent sales companies.

Kuwait intends to develop its own wholly integrated organization by itself, though with help from outside, and to hire "top-rate consultants, with at least 15 years marketing and other experience."

And Kuwait has the distinction of having formed the sole Middle East national oil company that won't be purely a government entity: 40% of the shares have already been sold to private Kuwaiti citizens. Four of KNPC's ten directors are businessmen; the other six, government appointees. It is generally expected here in Kuwait that the chairman of the board will be 43-year-old Sayid Ahmed Said Omar, deputy director of Kuwait's finance department, and head of the department's oil office (picture).

Furthermore, the venture doesn't face the major problem that usually handicaps most Arab enterprises: shortage of capital. Kuwait has plenty of surplus capital—both public and private—looking for new avenues of investment; so much so that, within a few days of the opening of the public subscription for shares, they were oversubscribed nine times.

There's no doubt, either, that KNPC's road to profitability will be "well-oiled," at least in the early stages.

The first step in the company's operations will be the take-over of all distribution and local marketing of petroleum products within Kuwait.

These operations are being turned over by Kuwait Oil Co. (owned by British Petroleum and Gulf Oil), to the state this January. The government, in turn, is slated to turn them over to KNPC within a few months.

The assets include 15 service stations (with an annual volume of over 50-million U.S. gallons of gasoline, plus 3 million of kerosine—all rising rapidly), storage facilities, and a marine fuel station for local craft. (International bunkering, however, is being retained by KOC.)

Furthermore, KOC has agreed to supply Kuwait with all its local market requirements at "cost"—that is, at the cost of producing and refining the crude.

Obviously, the combination of such low cost of the products and a monopoly of the local market guarantees that KNPC will be a money-making proposition from the start.

"This is a nice present for KNPC," explains one government official. "The distribution business alone will bring the company a steady income, from which it can set aside capital for further ventures."

* * * *

The next step, some of the new directors of KNPC told Petroleum Week, will be to take over drilling operations within Kuwait. A national drilling contracting service will be set up for this purpose.

Eventually, too, they hope to enter direct development of oil production in areas that may become available to the state through relinquishment. (At present, all of Kuwait's onshore and offshore oil rights are under concession: mainland Kuwait to BP and Gulf; mainland Neutral Zone to Aminoil; offshore Neutral Zone to the Japanese; and, now, the offshore Kuwait area to Shell.)

At any rate, KNPC will be assured of at least some crude oil production of its own—by its option to participate up to 20% in the new Shell concession.

In the unlucky event that the Shell venture should prove noncommercial, Kuwait is still assured of some crude oil supply through its option to acquire 10% of the shares of the Japanese Arabian Oil Co. (which has already found a substantial field).

"With one or other of these sources of crude," says a top government official, "we will build a refinery overseas, either individually, or jointly with Shell or someone."

Sayid Omar

Kuwaiti officials have remarkably few illusions about the costliness of such overseas refining and marketing facilities. They realize that they may have to plough back most of their crude oil profit into those facilities "for many years to come."

"But we have the money," says one top government source, "and this is as good a way as any to invest it: into experience, and knowhow, of our sole source of income."

At any rate, Kuwait will accquire a fuller first-hand acquaintance with the realities of the world oil market —which in itself might well be worth the whole effort.

* * * *

If Kuwait is so interested in an integrated operation, why did it refuse to participate from the beginning in the "integrated" phases of the new Japanese concession signed two years ago—in contrast to Saudi Arabia's insistence on its participation in these other phases right from the start?

"Because," explains an authoritative Kuwait source, "the Japanese were forming a new company that had never before engaged in the oil business. They had no tankers, no refineries, no distribution facilities, and no experience in oil—any more than we do.

"So what was there to 'integrate' with? It was merely something that looked glittering on paper, but had no meaning in reality.

"To set up our own facilities, is something else again, particularly with the help of a big established company like Shell.

"Maybe some day, years from now, the Japanese will work out to have a good future in refining and marketing. If so, we have the option to share in those other phases of their operations if we ever want to.

"But we insisted that, for the time being anyway, our 57% share of their profit be confined to crude production. We saw no reason to set aside most of our crude oil production profit for investment in all these other facilities of the Japanese."

LISTENING INTENTLY to Sir Stephen Gibson are Bader Mulla, Secretary of State of Kuwait, and L. M. Craig, Kuwait Oil Co. public relations director, as he forecasts . . .

1980 Reserves: 1-Trillion bbl.!

Sir Stephen Gibson believes the world petroleum industry will find as much new oil during the next 20 years as it has on hand today.

Sir Stephen is past president of London's Institute of Petroleum, and former managing director of Iraq Petroleum Co. His optimistic forecast was made at a recent meeting of the institute's branch in Kuwait.

"Looking into the future," he said, "with improved methods of recovery, reserves in another 20 years could amount to 1-trillion bbl."

He admitted that the figure sounded extremely large. But, he added, "we are dealing with extremely large potentials."

Proved reserves of crude, on a worldwide basis, currently are in the neighborhood of 300-billion bbl.

These, said Sir Stephen, are more than enough to take care of world requirements for 20 years or more.

But the important fact, he went on, "is that within these 20 years the industry will most likely uncover at least the same amount again."

The British oil man said new techniques and new geological concepts are revolutionizing the oil-finding business.

"Who would have thought five years ago that the northwest corner of Germany would be producing 100,000 b/d today?" he asked. "That oil's been there all those centuries, but no one realized it. . .

"The great new frontier may well be Africa . . . or it may be Australia," he continued. "Granted, Australia doesn't look so good for the moment, but neither did North Africa five years ago."

Crude, he said, is being found all over the world at a rate that would have been "unbelievable only a few short years ago."

API Gets Air Pollution Aide

Appointment of L. C. Burroughs as a full-time expert on air and water pollution indicates that the American Petroleum Institute is stepping up its activities in these touchy areas.

API, heretofore, has handled its pollution-abatement matters on junior staff level, and via committees that have been set up.

Burroughs, an employee of Shell Oil Co. since 1925, has been assistant to the vice-president for refining for the past 15 years. One of his specialized fields there was pollution abatement.

He joined the API staff on a full-time basis last week. He will be associated with W. T. Gunn, director of the Division of Refining.

Burroughs will administer API's technical committees concerned with air and water pollution, and will be the liaison with all interested agencies.

The latter, it is understood, includes such government agencies as the U.S. Public Health Service.

Burroughs is a firm believer in cooperative action on pollution abatement.

Kennedy Undecided on Key Oil Jobs

- **Director of Interior's Office of Oil & Gas, and Oil Imports Administrator are still to be named.**
- **Democrats also weigh possibility of creating a high-level assistant secretary in each Cabinet department.**

President-elect Kennedy is moving quickly to fill most key jobs in his Administration before the Jan. 20 inauguration.

Three Kennedy aides—Lawrence O'Brien, Kenneth O'Donnell, and brother-in-law Sargent Shriver—are working feverishly to get qualified men for several hundred posts.

Kennedy's designated Cabinet members are also spending most of their time lining up a host of assistants.

This week James K. Carr, a California water specialist, was named Under Secretary of the Interior.

Carr has had little experience in oil and gas matters and is not expected to exercise much personal authority on petroleum policies, as did his predecessor, Elmer Bennett.

With both Stewart Udall, Kennedy's designated Interior Secretary, and Carr lacking any strong views on oil and gas problems, there is an expectation that the department's policies will be influenced considerably by the next Assistant Secretary for Mineral Resources.

At mid-week, Kennedy Administration advisors said no one had yet been decided upon for that job.

Strong support was developing for a Louisiana political leader, Frank Ellis, but there were other possibilities, too.

The mineral resources job—to be vacated by Ross Hardy—is of major importance to oil men. The assistant secretary supervises the work of the Oil Imports Administration and the Office of Oil & Gas. Hardy, in addition, was chairman of the Oil Import Appeals Board.

Creekmore Fath, a controversial Texas political figure and one-time Interior Dept. aide as a special assistant to former Secretary J. A. Krug, earlier had been considered for the assistant secretaryship. He no longer is a serious contender for the job.

John A. Carver, Jr., assistant to Sen. Frank Church (D., Wyo.), will be Assistant Interior Secretary for Land Management.

Carver also had been considered for a vacancy on the Federal Power Commission, but his lack of regulatory experience was reportedly a bar.

Other Interior Dept. appointments expected to be made this week or next: Frank Barry, a Tucson (Ariz.) attorney, scheduled to be departmental solicitor; Kenneth Holum, a South Dakotan, for Assistant Secretary for Water & Power; and Floyd Dominy, expected to be kept as Commissioner of Reclamation.

Several sub-Cabinet positions affecting oil and gas interests remain to be filled.

Many of the positions are in the Interior Dept., beneath the secretarial level; in the Office of Civil & Defense Mobilization; and in regulatory agencies.

The key jobs of Oil Import Administrator and Director of the Office of Oil & Gas are both politically vulnerable.

Capt. Matthew V. Carson, Jr., now head of the Oil & Gas Office, may return to active duty with the Navy.

Lawrence O'Connor, who has served as Imports Administrator for only a few months, may be kept on in that job by the incoming Democrats, at least temporarily.

But a Democratic spokesman said this week that no decision had been made on the two jobs.

The industry, which has been requested to submit names of possible appointees, has its own ideas of some candidates for those positions.

While there is no apparent objection to either Carson or O'Connor, various oil men have suggested the following names: Ralph O. Dietler, former chairman of Indiana Oil Purchasing Co.; Allen Calvert, Oklahoma independent and a leader in the Independent Petroleum Assn. of America; Charlton H. Lyons, former IPAA president; Harry G. Wiles, chairman of the Kansas Corporation Commission; David E. Day, retired vice-president of Richfield Oil Corp. (L.A.); R. L. Foree, former president of the Texas Independent Producers & Royalty Owners Assn., and formerly with the Petroleum Administration for Defense; Ray Jones, chairman of the Oklahoma Corporation Commission; Admiral O. P. Lattu, of the Military Petroleum Supply Agency; and Vice-Admiral B. B. Biggs, associated with Washington oil matters during and since World War II.

The Democrats may add a powerful job in the Interior Dept. and other agencies—an Assistant Secretary for Legislative Affairs.

The job might outrank other assistant secretaries. Kennedy advisors are considering creation of such posts, but may wait until later before making the decision.

Kennedy is expected to name at least one person, perhaps two, to the Federal Power Commission.

No successor has been named for William Connole, who was not reappointed by President Eisenhower last year.

Kennedy can also replace one present commissioner, Paul Sweeney, who has not been confirmed by the Senate. Sweeney lists himself as a Democrat, however, and could be retained by Kennedy.

Kennedy's advisor, James M. Landis, is having considerable influence on the selection of regulatory commission members.

Landis, who will join the Kennedy Administration at least for a while, is being looked to by the president-elect for recommendations and guidance.

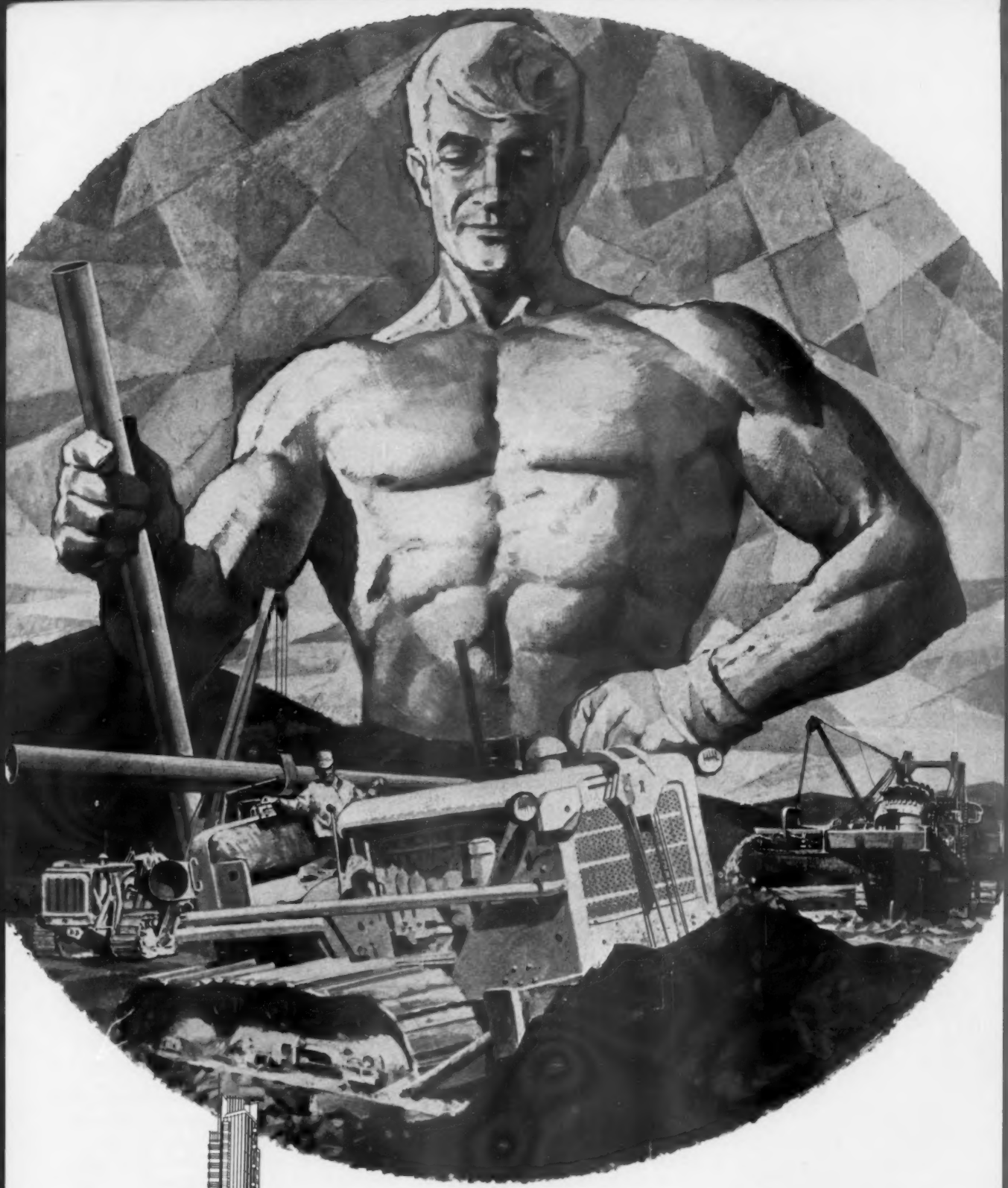
Landis is going against the political grain in some instances; associates say he is insistent that some normal political considerations be set aside, and that the agencies be staffed by people expert in the regulatory field.

At the Federal Trade Commission, Chairman Earl Kintner is expected to resign and be replaced by a Democrat.

Possible appointees to FTC posts include Paul Rand Dixon, counsel of the Kefauver antitrust subcommittee; Everett McIntyre, an aide to Rep. Wright Patman (D., Tex.) on the House Small Business Committee and a former FTC attorney; Albert Caretta, a former FTC member; and Walter Adams, an economics professor from Michigan State University.

There is some sentiment among Democrats for retaining Robert A. Bicks as head of the Justice Dept.'s Antitrust Division, but a replacement is likely.

Among those considered for Bicks' job are Herbert Maletz, counsel of the House judiciary subcommittee on antitrust; Harold Leventhal, a Washington attorney who has represented barge interests in opposition to oil and gas companies; Louis Schwartz, University of Pennsylvania law professor; and Tom Harris, an AFL-CIO attorney.



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Looking Ahead in Washington

McGraw-Hill
Washington
Bureau
January 13, 1961

Sentiment for proposing a national fuels policy study at the Cabinet level is developing among some oil spokesmen. The Kennedy Administration will be firmly committed to a study, they say, and oil should see that it isn't dominated by coal interests, or conducted amid Capitol Hill pressures. A Washington conference of petroleum associations and company aides at midweek discussed the idea of making overtures to Kennedy on oil's views.

Sen. Paul H. Douglas left fuels policy out of his depressed areas aid bill, after including a pitch for it in his report to Kennedy. The aid bill is "must" legislation to Kennedy. Strategists don't want it to be bogged down by the touchy fuels policy issue as it moves through Congress later this year.

•

Can protest-picketing of ships flying "flags of convenience" cause secondary boycotting? This new issue in the running fight over the Panamanian, Liberian, and Honduran vessels is before the National Labor Relations Board. Pennsylvania R. R. spokesmen and the dock and tug companies say that strikers honoring the picketing of the SS Ore Monarch in Philadelphia have illegally kept them from doing business.

The right of the maritime unions to organize the foreign-flag ships is a separate issue from their right to picket in protest. The basic question of their right to organize is now before NLRB in several consolidated cases. The Defense and State Depts. have entered the proceedings to question the U.S. unions' claims.

The National Maritime Union has promised widespread picketing if NLRB keeps it from organizing the ships. The effectiveness of such protests would be sharply cut if longshoremen were blocked from striking in sympathy because of secondary boycott violations.

•

Don't underrate the power of James M. Landis, the Kennedy advisor on regulatory agencies, despite grumbling in Congress over Landis's proposals to give the White House broad new authority for directing regulation. Senate and House Commerce Committee leaders, including Rep. Oren Harris, (D., Ark.), have questioned the propriety of strong White House control. But even if Kennedy adopts the Landis program, and Congress balks, Landis will be able to push for changes through new appointees. Some of his ideas do not require legislation, and he is credited with having a strong hand in the selection of commissioners, as well as the task of recruiting some himself.

•

Extension of the 2¢-per-gal. aviation fuel tax to jet fuels was urged in a report to the Senate Commerce Committee. The recommendation came from the task force on transportation headed by consultant John P. Doyle. It asked a Cabinet-level Dept. of Transportation to replace all agencies now in the field. It also asked separate trust funds, like the Highway Trust Fund, to finance air and water facilities. The impact of private trucking on regulated common carriers drew the group's concern, but it didn't ask regulation of private transportation. Instead, the report said, policies toward regulated trucking should be revised to make it cheaper and more efficient, and thus make private hauling less attractive.

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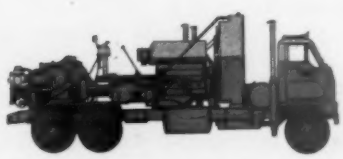

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What's New / IN THE INDUSTRY

The Texas Legislature is being urged to take a stand against leasing of highway rights-of-way for oil and gas drilling. A recommendation to that effect was approved by the legislative council after a study committee, headed by Rep. Richard C. Slack, of Pecos, pointed out that many problems would be involved. Slack's group held that not only would such leasing cause extensive litigation, but that it also would have a detrimental impact on conservation practices.

•

King Saud of Saudi Arabia this week set up a Supreme Council for Oil Affairs to assist in making oil policy. According to Radio Mecca, it includes several cabinet ministers. Abdullah Tariki, recently made Oil Minister, is presumably among them.

•

The Interior Dept. is ready to negotiate contracts to manage and operate five saline water conversion demonstration plants. The first plant, in Freeport, Tex., will begin trial operations next month, and swing into full-time operation 60 days later. Two other plants are under construction, and the remaining pair are still in the design stage. The Interior Dept. says companies awarded contracts will submit regular operating cost reports and efficiency studies, and will do experimental work.

•

National Petroleum Council appointments for 1961 include six new members. They are Perry Bass, a partner in Richardson & Bass; Paul N. Howell, San Antonio (Tex.) independent; Harry A. Jackson, president of American Petrofina, Inc.; Don H. Miller, president of Skelly Oil Co.; Monroe E. Spaght, president of Shell Oil Co.; and R. L. Vockel, vice-president of Waverly Oil Works Co. All other members of the 111-man Council were reappointed.

•

The public is being urged to look twice before investing in mail-order land leases. The American Assn. of Petroleum Landmen, in a scathing statement, lashed out at a group which it referred to as "40-Acre Lease Merchants." The association made clear that it wasn't referring to ethical lease traders and brokers, but to a limited group whose statements are "grossly misleading."

•

Mobil Oil Co. has modified its marketing department. It has discontinued the headquarters post of general manager, and replaced it with a new setup to be called market development. Glenn L. Werly, general manager of marketing, was named special assistant to the marketing vice-president, and G. Albert Klaffky, resales programs manager, was named manager of the new unit. At the same time, Mobil expanded the responsibilities of marketing's general operations department, and realigned its general sales department.

•

Contract troubles forced a shutdown of the Phillips Chemical Co. plant at Houston last weekend. Negotiations for a new contract collapsed as many other unions throughout the Southwest proceeded merrily with the business of ratifying new pacts calling for wage increases. The Phillips' strike affected 600 members of Oil, Chemical & Atomic Workers Local 4-227. It stemmed from disagreements on the effective date of the new contract, and reopening clauses dealing with fringe benefits.

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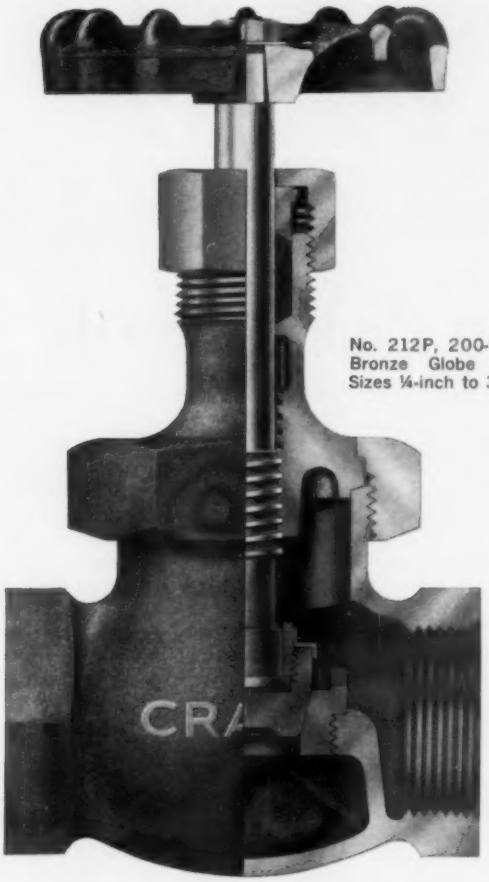

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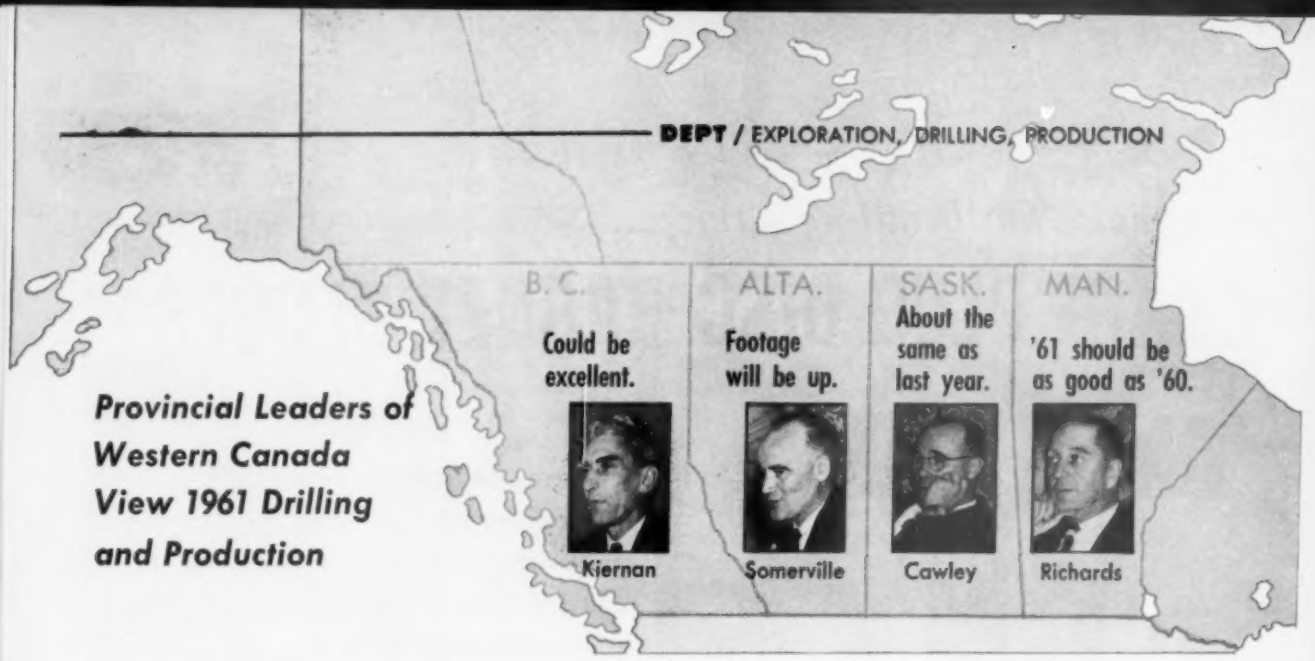


Provincial Leaders of Western Canada View 1961 Drilling and Production

Canada in 1961: Gas to Pace Growth

Natural gas again will be the prime growth factor for Canada's petroleum industry this year.

Over-all, most industry leaders and government officials look to 1961 as a year of general improvement over 1960.

And last year was a sparkling one for natural gas, with production up roughly 25% over 1959.

With some gas already moving into the U.S. under the large-scale export plan approved last summer, one major company estimates that gas sales from Western Canada, which averaged around 1.2-billion cf/d in 1960, will increase some 80% by the end of 1961, when all gas authorized for export has started moving.

By 1965, estimates L. F. McCollum, president of Continental Oil Co., "Canada's gas is expected to be supplying U.S. markets at an astronomical rate of 800-billion cu. ft. annually.

"This is equivalent, in terms of energy, to more than 350,000 b/d of crude."

While crude production hasn't increased as spectacularly as natural gas, it still has grown at a relatively faster rate in Canada than in other principal producing countries.

Though widely predicted increases of at least 10% in crude production over 1959 totals failed to materialize, the final increase was more than 3% —from 506,000 b/d in 1959 to an estimated 522,000 b/d in 1960.

Hopes for a larger percentage increase were based on growing use of Canadian crude in both the U.S. and Canada, particularly in Ontario. Crude exports to the U.S. did increase—from 92,000 b/d to 112,000 b/d. But despite this 20,000 b/d rise in exports, total production increased only 16,000 b/d, reflecting lower refinery throughputs in Alberta, Saskatchewan, and Ontario.

All in all, the oil and gas industry in Canada is growing faster than the general economy.

A year-end editorial in the Imperial Oil Review, organ of Imperial Oil Ltd., concludes, "If this is a sick industry, somebody should tell the 'patient' to lie down."

The editorial notes that oil and natural gas production together ran at around 745,000 b/d in 1960 (expressing natural gas energy content in terms of crude). This, said Imperial, represents an increase of 10% to 12% over 1959.

"There is every indication," the editorial adds, "that growth will continue at this or an even greater rate."

Imperial notes that additional sales of natural gas under the big export plan will, by 1962, be equivalent to 150,000 b/d of crude.

Most industry observers predict increases of from 5% to 10% in crude production this year. Contributing factors: rising demand, higher exports to the U.S., and greater use of Canadian crude by Ontario refiners.

One of the brighter spots in the picture, says the Canadian Petroleum Assn., is a widening of oil markets in the U.S.

John Proctor, CPA's general manager, sums up the crude situation:

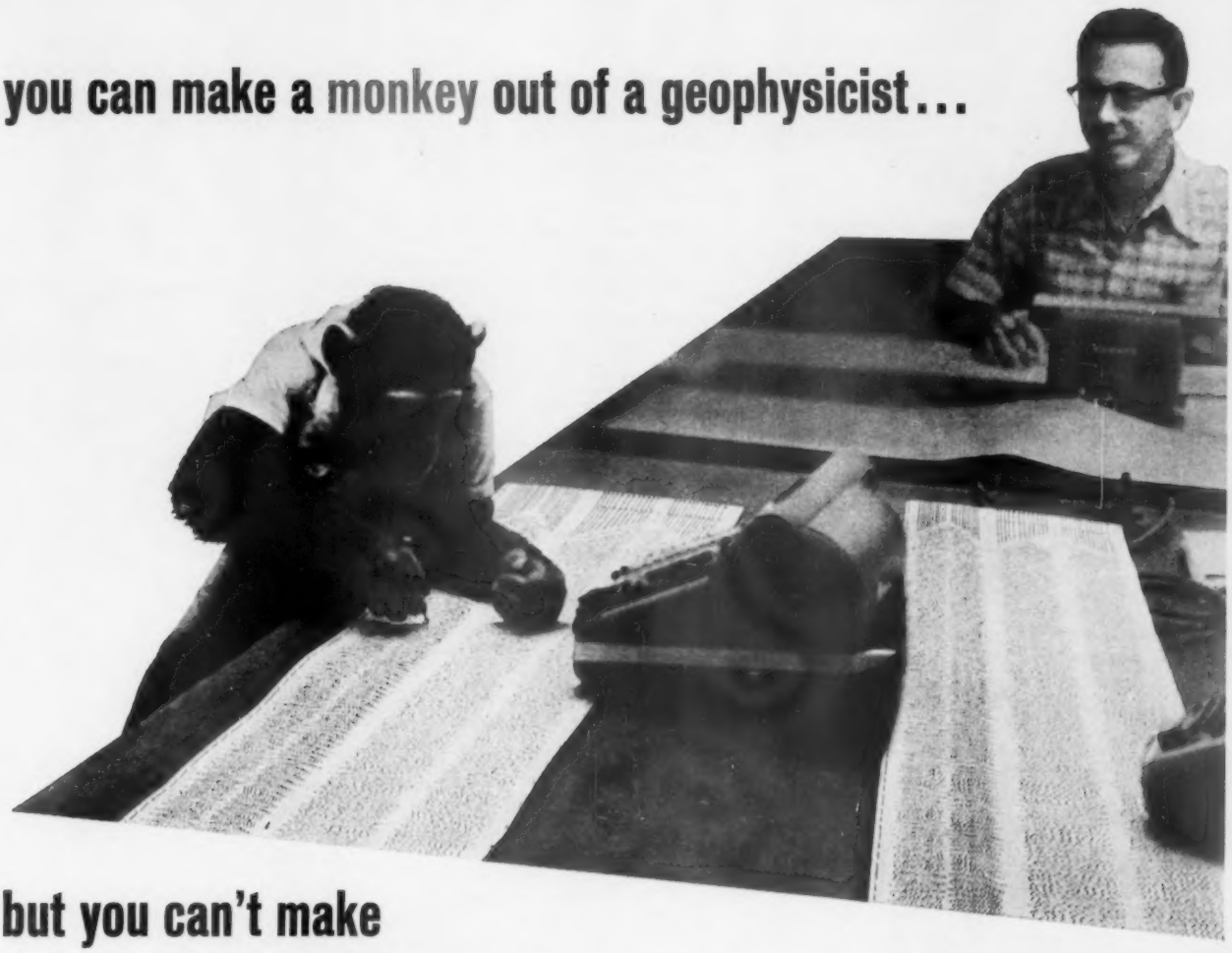
"There is certainly no reason to be pessimistic concerning the long-term prospects. Over the short run, however, adjustments to such things as the present world oversupply, the lessening of business activity, and the large extent of shut-in Canadian crude will be of great concern to all.

"Considerable pressure is being exerted on our government to widen the market for Canadian crude by one form or another. It appears that a large number of oil men agree that the Canadian market should be dedicated to Canadian production. But there is a particularly wide divergence of opinion on whether to introduce, by government action, Canadian oil into the Montreal and Maritime refining areas."

Some typical industry comments:

- E. D. Loughney, president, British American Oil Co. Ltd.: "Crude production in 1961 should show an increase of at least 8%, as many short-term factors which depressed 1960 production are removed."
- W. Harold Rea, president, Canadian Oil Companies, Ltd.: "Production of crude in Canada should rise from 5% to 10%, brought about by a slight increase in over-all consumption, a greater use of Canadian crude in Ontario, and higher exports to the U.S."
- A. F. Down, British Petroleum

you can make a monkey out of a geophysicist...



but you can't make a geophysicist out of a monkey!

It doesn't take a monkey to tell you that you get only what you pay for—in the geophysics field as in others.

One of our camp followers, Fidel by name, puts on a pretty good act among the record sections, slide rules, and delicate electronic equipment and looks sort of professional behind a desk.

Fidel might be taught to perform some fundamental chores with only an occasional banana break, but if any oilfields were discovered through his antics, they would be strictly accidental—and you can't afford to gamble on accidents.

The moral is this: Leave your geophysics to the proved professionals.

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ROGERS' CREWS GO EVERYWHERE

Co. of Canada, Ltd., and BP Canada, Ltd.: "In 1961 we anticipate a growth rate of over 6% in crude production."

One independent told Petroleum Week that, while natural gas will give the industry a boost, the larger problem of unlimited imports remains, and that a remedial national oil policy would be "even more significant" than the decision to export gas.

Glenn N. Nielson, president of Canadian Husky Oil, Ltd., says, "Canada simply cannot maintain a healthy oil industry by continuing to import more than half of its oil requirements while its own producers opcrate at less than half of capacity.

"A national oil policy which remedies this costly inequity would have far-reaching effects on both the oil industry and the Canadian economy." He adds that such a policy is already "long overdue."

In drilling, the outlook is for the number of holes to be roughly the same as in 1960, with more emphasis on gas and less on crude.

One industry spokesman in Alberta says drilling for gas in export areas will be up, while development drilling in other parts of the province will be down. "A balance has been struck —gas up, oil down."

A. G. Bailey, president of Alberta Gas Trunk Line Co., Ltd., says programs are well under way for the drilling of approximately 300 holes, the total which he earlier had estimated as the number necessary by Nov. 1, 1961, to meet delivery schedules.

Holes drilled in 1960 in Western Canada are estimated at 1,445 oil, 300 gas, and 670 dry, for a total of 2,415, compared with an over-all total of 2,525 in 1959.

Footage may inch up again this year, due mainly to deeper drilling. In 1960, for example, footage was up some 5% over 1959's 12,621,824 ft., despite the drop in the number of holes drilled.

CPA explains the increased footage this way: "There has been a drastic reduction of some 30% in the number of shallow wells completed in Saskatchewan, and a step-up of activity in the northeast corner of British Columbia.

"Concentration of drilling in the deeper sediments of the gas-rich foothills area has been the reason behind the increase in footage drilled."

Alberta's foothills and plains areas and the Ft. Nelson region of British Columbia stand out as the areas of major interest in 1961.

Likely Canadian Highlights for 1961:

Drilling: Around 2,450 holes to be drilled, roughly similar to 1960's total.

Footage: Should rise again, though perhaps not as much as 1960's 5% hike over 1959.

Production: Natural gas output should jump by at least 25%; crude production could increase from 5% to 10%.

The foothills will be particularly attractive because of reserves dedicated to gas export.

The northeast corner of British Columbia has been a hot spot the past two or three years, with each succeeding year better than the last and no letup in sight.

Saskatchewan's Midale-Weyburn area also may be in for some amount of quickened activity.

Aside from the gas-export regions, there will be continuing interest in exploration and development in such "standard" areas as Swan Hills, Virginia Hills, the Greater Pembina area, Judy Creek, and elsewhere.

Elsewhere includes the long Cardium sand oil trend, which may extend some 40 mi. or so from a starting point just north of Calgary.

The Worsley D-3 reef gas region bears watching, too. This field has been emerging steadily since 1959, when Shell Oil Co. of Canada, Ltd., brought in the discovery some 40 mi. east of British Columbia's Boundary Lake field.

Shell appears to have six or seven capped gas wells at Worsley, which is the northernmost D-3 reef find in Alberta. Results of the discovery became known only last month, since wildcats in Alberta are granted confidential status for one year from the "finished-drilling" date. The report shows that the discovery flowed at rates up to 8-million cf/d on test of the reef, topped at 7,200 ft.

The remote Caribou Mountain region, also called Dizzy Creek, in northcentral Alberta, may make news this year. Pan American Petroleum Corp. plans to drill eight tests there this winter.

And there is a chance—albeit a small one—that a hole may be drilled on Melville Island, one of the Arctic Islands, this year.

Government leaders of four Western Canadian provinces hold generally optimistic views for drilling and production this year.

The four officials recently addressed the annual meeting of the Canadian Assn. of Oilwell Drilling Contractors. Following the meeting, PETROLEUM WEEK asked the four to give their views on the coming year.

H. H. Somerville, Deputy Minister of Mines & Minerals for Alberta, expects footage to be up, and is "hopeful" that crude markets will improve.

Somerville expects a rise in Alberta footage because of the gas wells that will be drilled in the deeper regions of the foothills.

He expects drilling to total around 10-million ft. in 1961. Footage in 1960 is estimated at around 9-million ft., compared with the 1959 total of 8,750,270 ft.

Somerville says Alberta's crude producing capacity has reached 900,000 b/d, but that production is running under 40% of potential. He adds that "we are very hopeful" that markets will improve this year, and also that it would be a help if the views of the Borden Commission were implemented with respect to such markets.

He also hopes for an early start on a natural gas liquids line in Alberta.

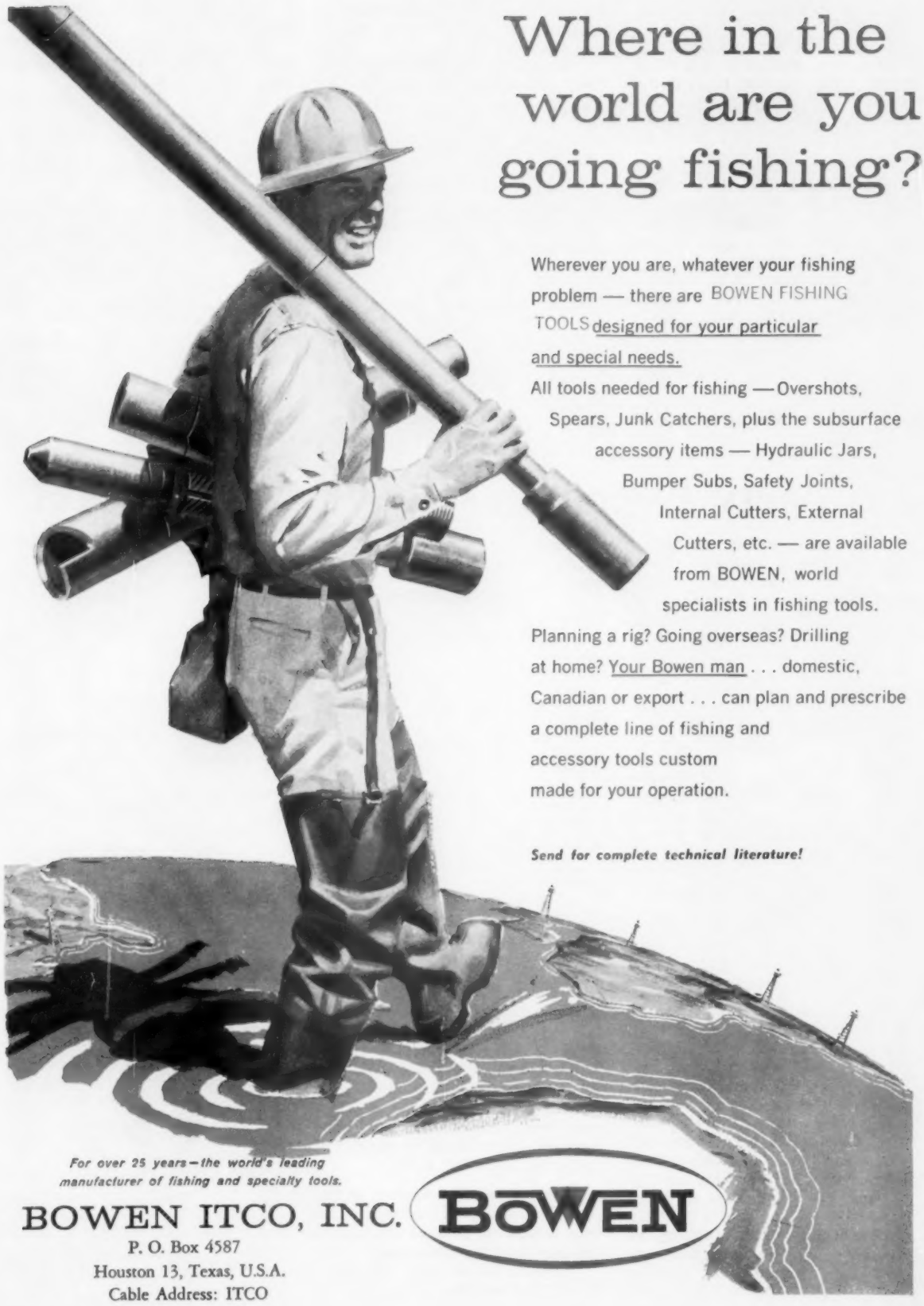
W. K. Kiernan, Minister of Mines & Petroleum Resources in British Columbia, takes a conservative view of the year ahead. But even a conservative view is a bright one for the province.

Kiernan says there may be greater footage drilled this year, but not necessarily more holes (the estimate is around 150 holes for 1960). Footage last year totaled over 700,000 ft., compared with 597,702 ft. in 1959, when 115 holes were drilled.

He notes that pipeline construction could spur development drilling for oil and raise the number of holes drilled to around 175 this year.

The minister says he expects Peace River crude to be marketed in the Vancouver area before the end of 1961. On the basis of wells already drilled in that area, he says, there is a producing capacity of 12,000 b/d. He adds that this amount could be doubled by development drilling alone.

In his talk to CAODC, Kiernan said that before a really comprehensive picture can be had of resources in the Peace River area, "we will have drilled between 6,000 and 10,000 wells, and many of them will have to be 14,000 or 15,000 ft. deep to pene-



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trate the entire sedimentary basin in that area."

Kiernan added that exploration also is going on in areas other than Peace River: in the southeast corner of the province, in the central interior plateau, in the Queen Charlotte Islands, down the coastal islands, and in the Fraser Valley.

J. S. Richards, Director of Mines in Manitoba, looks for drilling starts in 1961 to stay at about the 1960 level, which showed a good increase over 1959.

There were some 70 holes drilled in the province last year, compared with only 45 in 1959 (29 oil, 16 dry).

Richards traced 1960's increased drilling activity for the most part to extensions to existing fields, notably at Virden.

J. T. Cawley, Deputy Minister of Mineral Resources in Saskatchewan, expects 1961 drilling to be "about the same" as in 1960.

The number of holes drilled in 1960 is estimated at between 550 and 560. Production averages 145,000 b/d, or 60% of producibility. Around 80% of the light crude, 60,000 b/d, goes to market.

Weather and ground conditions are listed as among the factors contributing to difficulties faced by Canadian drillers now.

Says R. H. Bullied, newly elected president of CAODC and general manager of Cascade Drilling Co., Ltd.: "Another contributing factor . . . is the geographic locations of areas of interest to major oil companies. Many of these remote areas are inaccessible, except under frozen conditions, thus reducing the effective number of operating days per year for the drilling equipment. . ."

Simply stated, he says, the major problem is that there are more rigs than there is work.

This is due in part, he adds, to the fact that drilling techniques today have advanced to the point where one rig is capable of doing the work that would have required two, five years ago.

"The very keen competition which exists," says Bullied, "coupled with the hazardous nature of the operations, has reduced the area of profit to a degree that it can no longer be reconciled with capital investment on a sound basis."

Bullied concludes on an optimistic note, however: "The most encouraging note is the excellent ratio of discoveries in Canada . . . discoveries which could stimulate the industry."

Property Exchanges on Upswing Again

Major companies are once again leaning heavily on trade-outs, or mutually beneficial exchanges of producing properties, as a means of consolidating their property holdings.

Few trade-outs ever become public knowledge, but one major company estimates that its trading in producing properties has increased as much as 50% in recent months. Other companies report lesser, but still significent, increases.

Exchange deals—as contrasted with unitization and joint-interest agreements—still constitute a relatively small percentage of over-all property transactions.

In terms of actual acreage involved, according to one source, the ratio is probably 8 to 1 in favor of joint-interest deals. But even this ratio is significant when considered in light of the virtual moratorium that existed for several years in trade-outs.

Most exchanges today involve relatively small, isolated holdings that the companies wish to consolidate for economy reasons.

The major factor underlying such deals is an elimination of duplicate efforts being performed by each company. Company A, for example, may own a small tract in a West Texas field adjacent to the larger holdings of Company B; while in an Oklahoma field the opposite will be true. By exchanging these small tracts, the companies are able to reduce overhead and operating costs considerably.

Some of these agreements are also being made for secondary recovery purposes.

A recent example was in an Andrews County (West Texas) pool, where secondary recovery operations were stymied because one working interest was dissatisfied with its percentage participation under the proposed unitization formula. The dilemma was solved when the company traded for other properties owned by the major interest holder, which subsequently took over as unit operator.

A similar case came up several months ago in southern Oklahoma's Golden Trend area.

Of the three pools that produced from a common reservoir, two had been unitized for secondary recovery purposes for some time.

Depleted reservoir pressure in the northernmost, nonunitized portion of the field had reduced total production from 28 wells to the stripper level of roughly 400 b/d. However, a major company declined to enter into a unitization agreement.

An exchange was arranged, and the unitized pool—now nearing the third stage of a planned five-stage waterflood development program—currently is producing at the rate of approximately 1,300 b/d.

One of the chief factors in negotiating a successful exchange: The two companies must own properties of essentially the same worth.

"Seldom has it been my experience," says one major company executive, "that cash is involved in a trade-out deal. While trading may be done for a variety of reasons, agreement on the approximately equal worth of two separately owned properties is a basic consideration. And since many deals are put together on the phone, complete honesty on the part of both parties is absolutely essential."

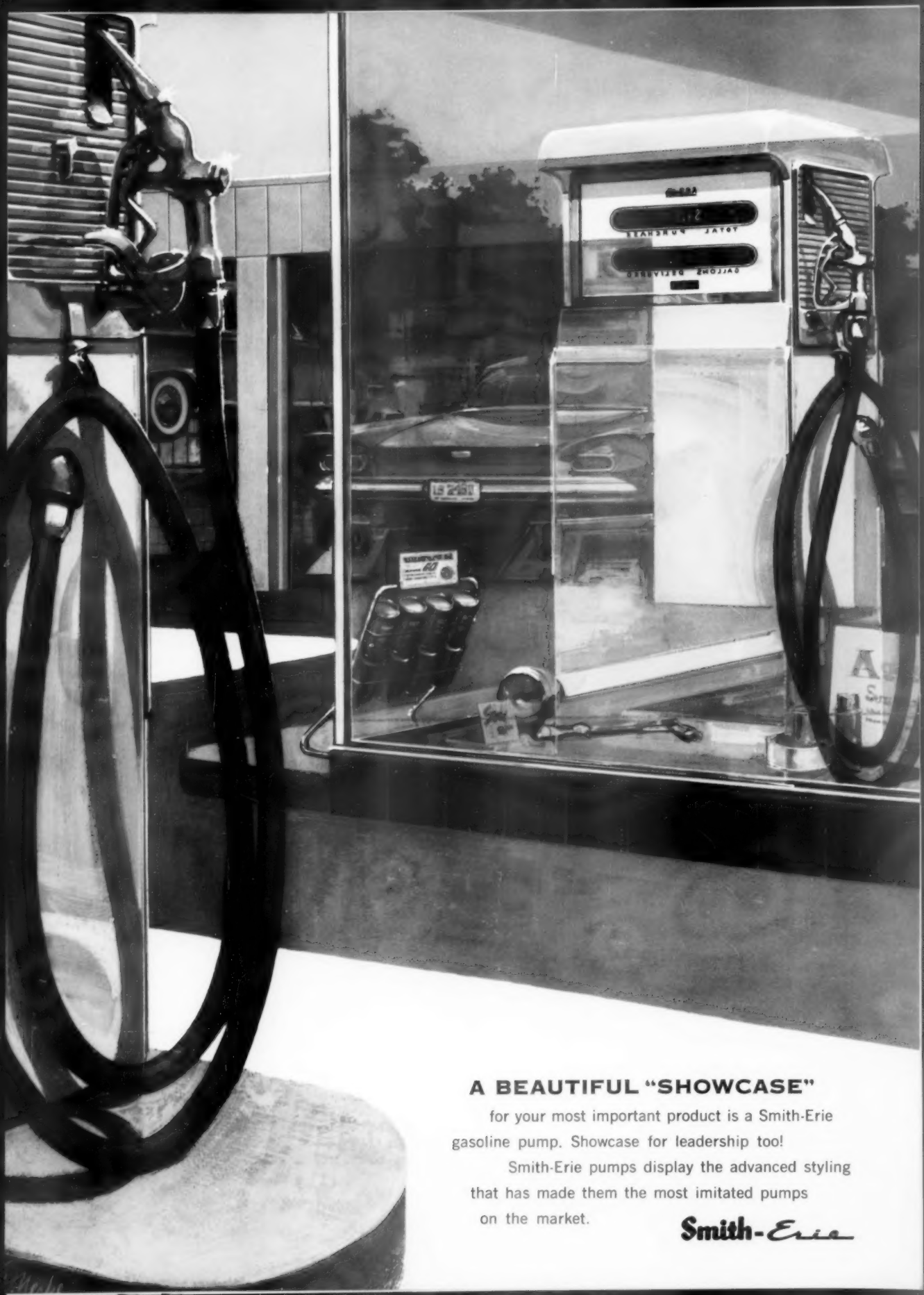
Part-interest and trade-out deals often complement each other.

In one recent case, a slight disparity in agreed-on worth existed between two properties being considered for trade. The deal was completed after the company owning the lesser property agreed to balance the scales with a percentage of its ownership in a unitized property in which the second company had a joint interest.

Several large companies now recognize the importance of a general staff department that can cross division lines in formulating exchange deals.

Sinclair Oil & Gas Co. last month announced formation of a general staff department having this prerogative, and Gulf Oil Corp. is reported to have recently assigned similar duties to members of its general staff.

Shell Oil Co. and Phillips Petroleum Co. have operated under this principle for some time. Most other major companies continue to handle trades at the division level, or else depend strongly on division recommendation.



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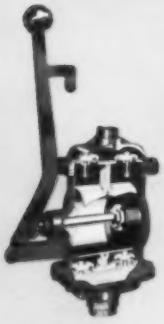

Model 1608-10 double-action pump.

Model 1611-10 pump with suction pipe and 8' of ¾" static wire-bound hose and nonsparking nozzle.

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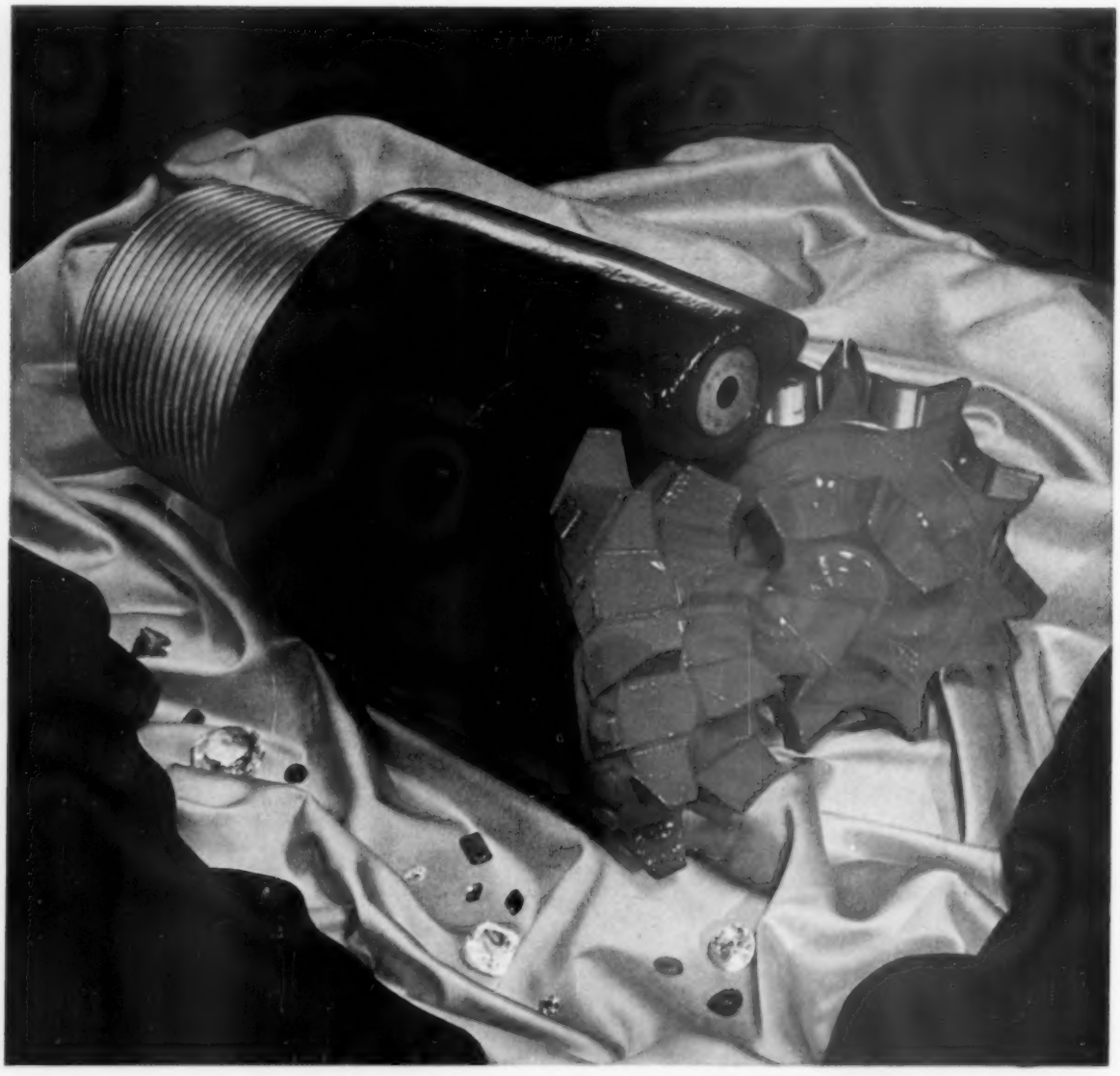

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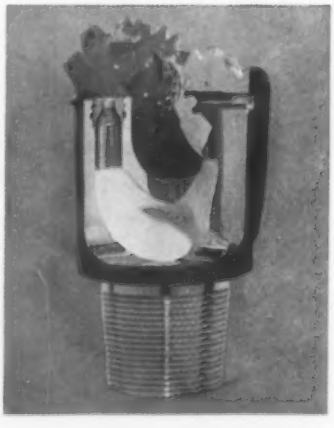

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Tool Spots Outside Casing Corrosion

Corrosion on the outside as well as the inside of oil well casing can now be detected by a tool that measures the thickness of casing walls with an electromagnetic wave.

Shell Development Co., developer of the instrument, says this is the first tool capable of uncovering an attack of corrosion on the outside, or earth side, of the steel lining.

Here's how the instrument works: Alternating waves are transmitted by an exciter coil small enough to be lowered into a well. These waves travel from the coil to the casing encircling it, then back to a pick-up coil beneath the exciter.

The time it takes a wave to make the trip between coils is determined by the thickness of the steel through which it passes; the thicker the steel, the longer the time. Thus, as the coils are lowered into the well, the instrument reports changes in wall thickness in terms of the fluctuations of the waves' travel time.

These data are transmitted to instruments on the surface by electronic components encased in the hollow 7-ft. tube on which the coils are mounted.

A pen recorder on the surface follows the descent of the probe, drawing a profile of the casing's thickness from top to bottom. This record shows both the depth at which corrosion is occurring and its extent of penetration.

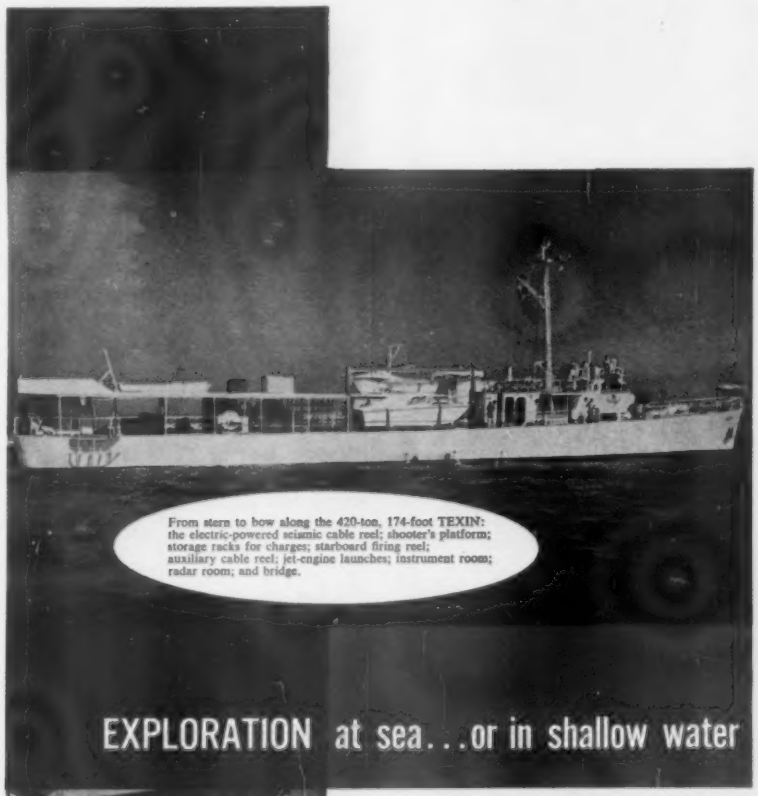
The instrument can spot a thinning of as little as 1/200th of an inch, thus detecting corrosion long before the casing is penetrated.

According to Shell's Thomas R. Schmidt, one of the designers of the tool, the tool will operate to roughly 15,000 ft. But it can be adapted to operate at greater depths. The logs of the instrument are not distorted by mud scale, or by any fluids present in a well.

The instrument is lowered on a single conductor cable. Recommended logging speed is 1,800 ft. an hour, with a maximum of 3,600 ft.

Shell has licensed the instrument to McCullough Tool Co., Los Angeles, and the Welex division of Halliburton Co., Houston.

CLOSEUP shows electronic components of the probe's hollow tube.


From stern to bow along the 420-ton, 174-foot TEXIN:
the electric-powered seismic cable reel; shooter's platform;
storage racks for charges; starboard firing reel;
auxiliary cable reel; jet-engine launches; instrument room;
radar room; and bridge.
EXPLORATION at sea...or in shallow water

Remote coastal areas . . . far distant from supply ports . . . are the scene of many seismic surveys. These areas are best worked with the single-ship method of exploration. GSI's *new* TEXIN, similar to her sister ship the SONIC, travels to your prospect under her own power, arriving equipped and provisioned for an extensive offshore program. Auxiliary, jet-engine launches project data-gathering facilities into water no deeper than 18 inches . . . giving you a complete marine survey . . . from deep water to shoreline.

Write now for Bulletin S 60-1, describing both the TEXIN and SONIC.

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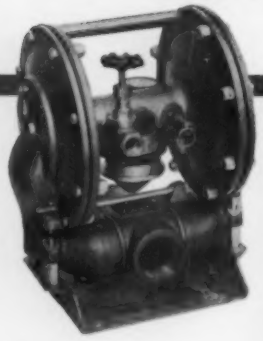

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What's New / IN PRODUCTION

Texas Completions Drop

Completions in Texas declined 9.5% during 1960, from 19,386 in 1959 to 17,553. The decline was offset somewhat by an increase in multiple completions.

The Texas Railroad Commission reports that oil wells completed in 1960 totaled 9,757, compared with 11,411 in 1959. Gas completions, however, climbed from 1,825 in 1959 to 2,131 last year. Dry holes totaled 5,665 in 1960 against 6,150 in 1959.

Drilling applications also dropped in 1960; they were down 16.9% to 16,987.

•

The Soviet Union's Azerbaijan scientists say preliminary investigations indicate that their proposed 32,800-ft. test will encounter pressures of 11,400 to 14,000 psi. at temperatures between 570F and 750F.

According to Tass, the Soviet news agency, Russian engineers foresee using a 190-ft. derrick. They estimate a crown load of 500 metric tons, a hoist power of a minimum 2,400 kw., and a drill pipe weight of 300 metric tons, at full length.

The Soviets say the drill pipe will be made of a "special hard metal."

They add that they hope to use a light-weight, super-strength plastic for production tubing. No decision has been made regarding drill bits. Methods of rock-crushing such as thermal, hydraulic percussion, and sonic effect are also under investigation, Tass says.

•

Two applications for sextuple completions and one for a quintuple have been set for hearing Jan. 24 before the Texas Railroad Commission.

There has only been one sextuple and one quintuple completion in the industry's history.

Sunray Mid-Continent Oil Co. is applying for a sextuple approval for its No. 20 McFaddin, in the McFaddin field, Victoria County. Sunray proposes to perforate at 3,456-60 ft., 4,036-49 ft., 5,027-32 ft., and 5,110-15 ft., all for gas production; and at 5,280-85 ft. and 5,736-38 ft. for oil production.

The other sextuple application is by Humble Oil & Refining Co. to complete its No. 167 King Ranch-Borregos in the Borregos field, Kleberg County. Details of this completion have not been disclosed.

Humble also wants to quintuply complete its No. 28 King Ranch-Alazan in the H-08, H-21, H-28, H-86, and H-57 zones, North Alazan field, Kleberg County.

If approved and completed, the well will be the first quintuple in Texas.

•

Plans of Sinclair Oil & Gas Co. to operate a tertiary thermal recovery project in the old Delaware-Childers field, Nowata County, have been approved by the Oklahoma Corporation Commission.

The experimental underground combustion project will be carried out on a conventional 20-acre, 5-spot pattern, in section 35-27n-16e, 5 mi. northeast of Nowata townsite.

The project is to be conducted in the Bartlesville sand at a depth of approximately 650 ft. During the more than 50 years since discovery of the field, oil has been produced by primary, vacuum, gas injection, and waterflood operations.

The reservoir has been subject to waterflood for the past ten years, and is nearing depletion by that method. However, core studies indicate that roughly 50% of the original oil is still in place.

•

Lease ownership maps of the New Mexico portion of the San Juan Basin are now available.

The maps, published by Roswell Map & Blueprint Co., Roswell, show the lease owners, numbers, expiration dates, elevations, total depths, tops of pay, producing formations, well potentials, completion dates, and many geological formation tops.

•

Oklahoma independents are fighting Gov. J. Howard Edmondson's proposal to tax natural gas 1¢ per Mcf.

Paul R. Schultz, president of the Oklahoma Independent Petroleum Assn., terms "erroneous" the governor's statement that 80% of the natural gas produced in the state is sold

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PERFORATING SERVICES

your best bet for best production

Here's the most complete, most efficient line of perforating services available to the oil industry – all designed with one objective – to get more oil, *best* possible production!

Choice of the type perforating process to be used depends on the nature of the formation to be penetrated and the method of well completion; whether in full size casing, thru-tubing or in slim holes.

At McCullough you'll find bullet and jet guns, in a variety of types and sizes, to handle every requirement – quickly, efficiently and profitably – your *best* bet for *best* production!

FOR PERFORATING IN CASING

McCULLOUGH BULLET GUNS – World's hardest shooting bullet guns. Best available perforating process in all formations except extra hard.

McCULLOUGH GLASS JET GUNS – Most versatile and efficient of all jet casing perforators. Deep penetrating, carrot-free, junk-free. Uses flexible, retrievable Steel Strip Carrier. Gets best results in hard formation.

McCULLOUGH TUBULAR CASING JET GUNS – Star Jet, DuPont, Dynajet and Super Dynajet charges are available in most areas to meet varying well conditions.

TORPEDO JET GUNS, expendable type perforators for cased and open hole operations. Offered in limited areas.

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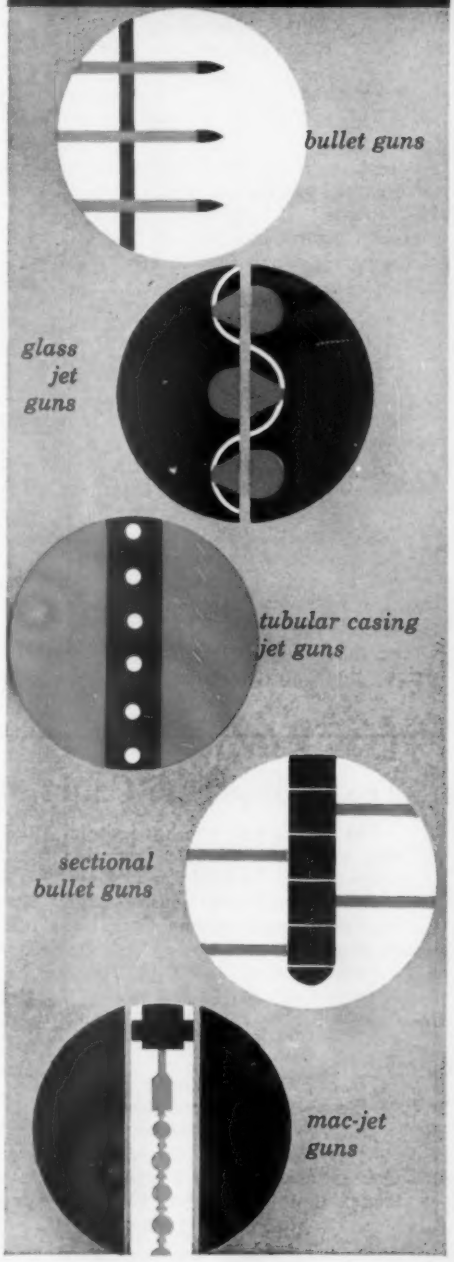
McCULLOUGH SECTIONAL BULLET GUNS – Only small diameter bullet guns made. Sizes are 1⅛", 1⅜" and 2⅛" OD. Backed by a record of more than 20 years of fine performance.

McCULLOUGH MAC-JET GUNS – Finest and most advanced of all small diameter, expendable jet guns. Features include enclosed firing system, minimum debris, deep penetration, high well flow index, carrot-free. Widely used in both thru-tubing and slim hole work.

OTHER SMALL DIAMETER GUNS include the **LINK JET** and **TORNADO JET,** expendable thru-tubing perforators; and the **SIDEWINDER,** a retrievable jet perforator for slim hole operations.

SPECIAL APPLICATIONS

McCULLOUGH FOUR-WAY SQUEEZE JET GUNS – designed to assure even distribution of cement around casing. **FRAC-JET** – fires eight jets on a horizontal plane for fracture placement.



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outside the state. He contends that approximately 48% of Oklahoma's gas is consumed within the state. Schultz charges that the tax would mean a higher gas bill to every consumer in the state. The proposed tax was one of six the governor suggested to the legislature as possible solutions to the state's financial situation.

•

Oil and gas rights to over 1.7-million acres in northern Alberta will be offered at reservation sales Jan. 17, 26, and 31, and Feb. 2.

Areas No. 1900-1907, covering 526,-188 acres, will be offered Jan. 17; Areas No. 1908-1916, covering 464,-320 acres, Jan. 26; Areas No. 1917-1925, 494,930 acres, Jan. 31; and Areas No. 1926-1935, 245,341 acres, Feb. 2.

Alberta will also offer Crown Reserve natural gas licenses No. 112 to 117, covering 124,960 acres in the southern, central, and northern parts of the province, at a Jan. 24 sale.

•

Engineering

A new circular slide rule will help oil operators who are not versed in detailed log interpretation to find possible oil or gas zones recorded on sonic and induction electrical logs.

Schlumberger Well Surveying Corp.'s "Zone Finder" is based on the company's apparent water resistivity method, and is particularly suited to Louisiana and Texas Gulf Coast formations.

The slide rule may be obtained by writing the company, in Houston.

Drilling Highlights

Utah—Champlin Oil & Refining Co. and Murphy Corp. No. 1 Navajo, section 13-43s-24e, San Juan County, flowed at the rate of 2,085 b/d through perforations at 5,304-46 ft. in the Ismay member of the Paradox. The Anido Creek discovery is 8 mi. south of White Mesa pool, 15 mi. south of Aneth, and 4 mi. north of the Arizona boundary.

In Uintah County, Mountain Fuel Supply Co. No. 1 Island Creek Unit, section 7-10s-20e, tested 11-million cf/d of gas at 5,487-569 ft. in the Wasatch. The prospect is 7 mi. west of Wasatch gas production at Uintah unit.

West Texas—Tennessee Gas Transmission Co. and Continental Oil Co. No. 1 Virgil Graham, section 30, block 33, township 3n, T&P survey, Howard County, flowed 265 bbl. of 42.3-gravity oil in 20 hours through 20/64-in. choke and open-hole section at 9,038-115 ft. in a Pennsylvanian reef. The pool opener is 2¼ mi. southeast of the Southeast Ackerly Dean pool.

In Gaines County Union Oil Co. of California No. 2-1 Jones Estate, section 1, block A8, psl survey, was completed for 187 b/d of 36.8-gravity oil on the pump through perforations at 8,004-22 ft., 8,037-62 ft., and 8,074-80 ft. to give West Texas its first Abo (lower Permian) reef production, 18 mi. east of similar production in the Lovington area of New Mexico. The pay opener is in the Brown area, where production is from the Glorieta.

In Reeves County, Sinclair Oil & Gas Co. No. 1 O. J. Green, section 27, block C-3, psl survey, was completed as a Delaware sand discovery flowing 196 b/d of 36.5-gravity oil, based on 14-hour flow through ¼-in. choke and perforations at 4,948-60 ft. The find is 2½ mi. northwest of the Waha Delaware area.

Oklahoma—Texaco Inc. No. 1 Woodruff, section 4-15n-13w, Blaine County, flowed 7,210,000 cf/d of gas and 336 b/d of 55-gravity condensate through 14/64-in. choke and perforations at 10,220-40 ft. in the Morrow. The discovery is 8 mi. west of South Watonga pool.

New Mexico—Sunray Mid-Continent Oil Co. No. 1-X New Mexico-State, section 20-17s-36e, Lea County, was completed for 545 b/d of 35.9-gravity oil through 18/64-in. choke and perforations at 9,002-14 ft., 9,017-19 ft., and 9,024-62 ft. The opener is 1½ mi. south of West Lovington pool.

North Texas—Bayview Oil Corp. et al No. 2-A H. C. Gilmore, George Dedrick survey, Jack County, flowed 409 b/d of 43-gravity oil through 12/64-in. choke and perforations at 4,624-40 ft. in the Mississippian. Operator has asked discovery allowable for the venture, ½ mi. southeast of Baytex pool.

Colorado—Ambassador Oil Corp. No. 1 Parachini, section 30-5n-59w, Morgan County, was completed for 240 b/d of oil and 430,000 cf/d of gas through perforations at 6,050-55 ft. in the D sand. The discovery is ¾ mi. east of Jackson field and separated from it by a dry hole.

Texas Supreme Court to Decide Fracturing Jurisdiction

The question of who has jurisdiction over gas reservoir fracturing projects—the Texas Railroad Commission or the District courts—is before the Texas Supreme Court for decision.

Oral arguments before the state's highest court began last week on appeals of three cases involving operators in Hansen field, Hidalgo County.

Lower courts were unable to agree on the jurisdictional question.

James P. Hart, attorney for operators A. W. Gregg, Christian A. Holmes, and William Dugger, contended that the Railroad Commission has authority to permit sand fracturing, even though it may open cracks within the reservoir that cross lease lines. Hart argued that if courts attempt to regulate the process, a lack of uniform policy will result.

A. W. Walker, Jr., representing Delhi-Taylor Oil Corp. and others, replied that the state courts should have jurisdiction "because this is a clear case of trespass."

The original suit was brought on the ground that fracturing or acidizing in a closely spaced area would give the defendants access to gas deposits under plaintiffs' land.

The Hansen reservoir is prorated on the basis of one-third allocated to wells and two-thirds to acreage.

The cases involve four wells. One is drilled on a two-tenths-acre tract, with the well 10 ft. from the protesting neighbor; another is drilled 15 ft. from an adjoining lease; and the other two are 37½ ft. and 50 ft., respectively, from adjoining leases.

Walter quoted engineering testimony that fracturing would result in gas recovery in a 103-ft. radius from the well. Hart contended that small-tract producers do not concede that fractured seams extend into adjoining leases.

Why the major seller of new equipment is your logical supplier of used equipment

When you are in the market for a used car, chances are you can get your widest choice and best value from the dealer who sells the most new cars.

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Used equipment items generally available through your National Supply store include complete rigs and auxiliary equipment—everything to round out your drilling equipment needs. National Supply also is the place to look for used pumping units and accessories, and tubular goods—drill pipe, casing and tubing.

No matter what your requirements—new or used equipment, repair parts, general supplies, or just sound, technical advice—you'll find that the National Supply store is your most reliable, economical source. There are 118 of these stores located strategically to serve you. Next time you buy, see National Supply.

See next pages for announcement of new J-50 triplex pump

National Supply announces

Three J-50 triplex pumps are operating in this water flood installation near Wichita Falls, Texas. Large plungers available for the new National Supply J-50 give it the capacity to produce a higher volume than any comparable triplex pump.

NEW J-50 TRIPLEX PUMP

for Water Flooding · Power Oil Service Salt Water Disposal

A new horizontal triplex pump, the J-50, is announced by National Supply for many applications such as water flooding, salt water disposal and power oil service. The pump is rated at 50 input horsepower.

The new J-50 triplex pump offers low initial cost, plus a proven ruggedness and smooth operation that will minimize your downtime.

Some of the important advantages are:

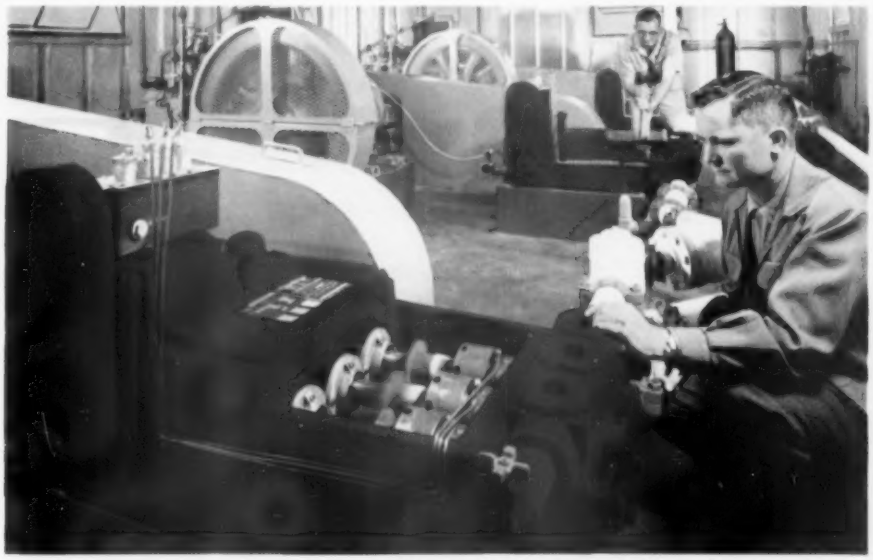
BUILT-IN SUCTION DAMPENER. The diaphragm-type suction dampener runs the full length of the fluid end, directly beneath the suction valves, to provide optimum dampening effect. This prevents harmful surges from developing in the suction piping.

LIGHTWEIGHT ALUMINUM ALLOY CONNECTING RODS. They permit operation at higher pump speeds, with greatly reduced inertial loading. Connecting rods form their own bearing surface, give long, trouble-free service.

DOUBLE EXTENSION CRANKSHAFT. Made of forged steel, it permits a direct or a V-belt drive connection to be made without reversing the crankshaft. Double extension enables you to connect auxiliary drives, such as chemical, sump or charging pumps.

SPECIAL FLUID END FOR POWER OIL SERVICE. The J-50 can be equipped with a fluid end built especially for power oil service. Important features are the quick change liners and plungers. Large plungers, for high volume, can be used when the hydraulic down-well pump is to be run into the hole. The large plungers can then be replaced quickly with smaller plungers for high production pressures. Fluid ends can be furnished with a full flow, full opening, ball-and-seat valve arrangement which eliminates restrictions beneath the ball.

The National J-50 pump is now available in three models: the J-50 L and J-50 M for low and medium pressures in corrosive and noncorrosive service, and the J-50 PO for power oil service. Literature on this versatile new pump is yours for the asking. Write today to National Supply Division, Armco Steel Corporation, 2 Gateway Center, Pittsburgh 22, Pa.



The J-50 has an integral suction pulsation dampener extending the full length of the fluid end, directly below the suction valves for maximum efficiency. Performance and maintenance features include all those of the popular National J-125 triplex pump.

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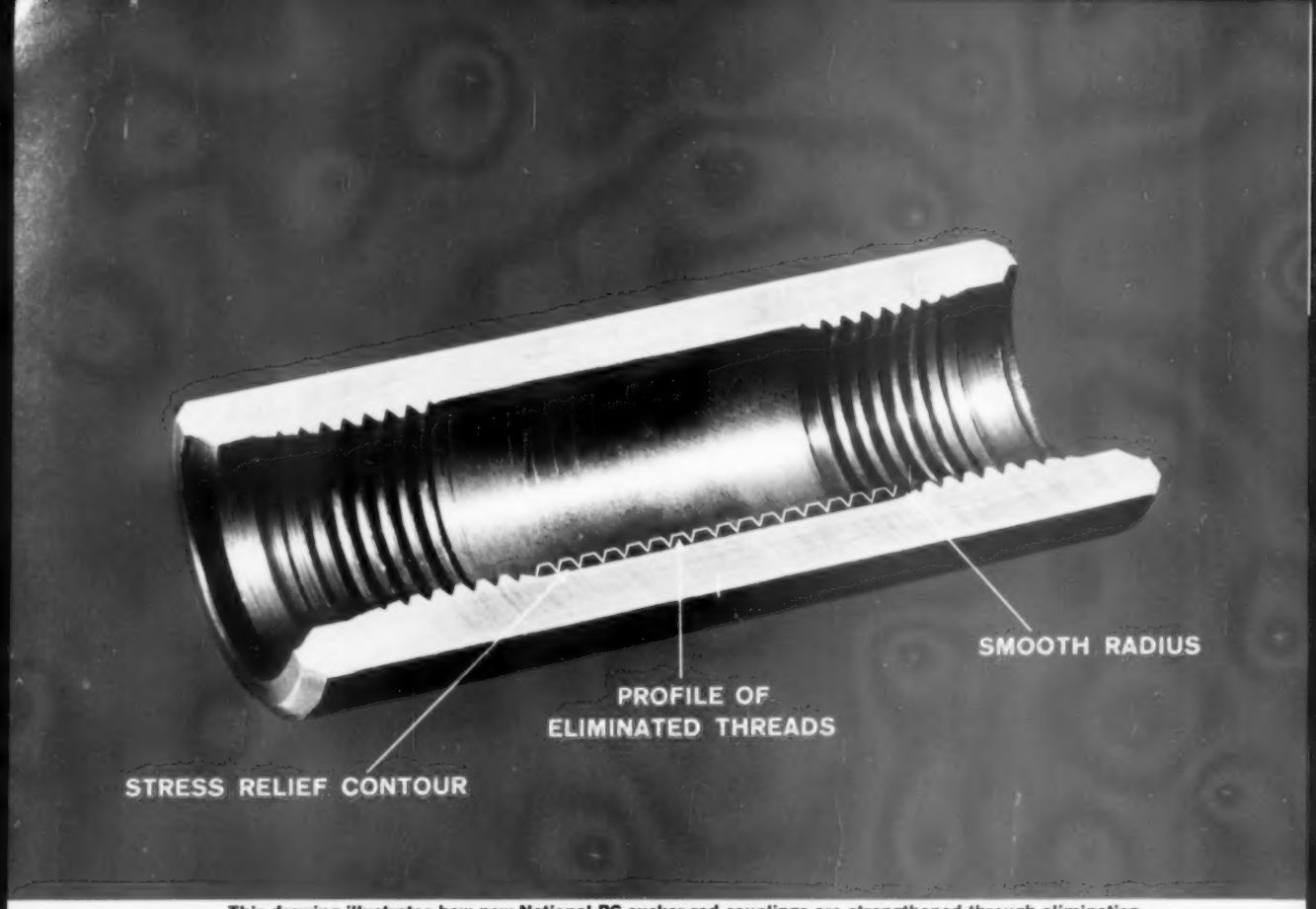


This drawing illustrates how new National RC sucker rod couplings are strengthened through elimination of unused threads. Ask your National Supply representative for details.

Now! High-strength, stress-relieved couplings to improve performance of high strength sucker rods

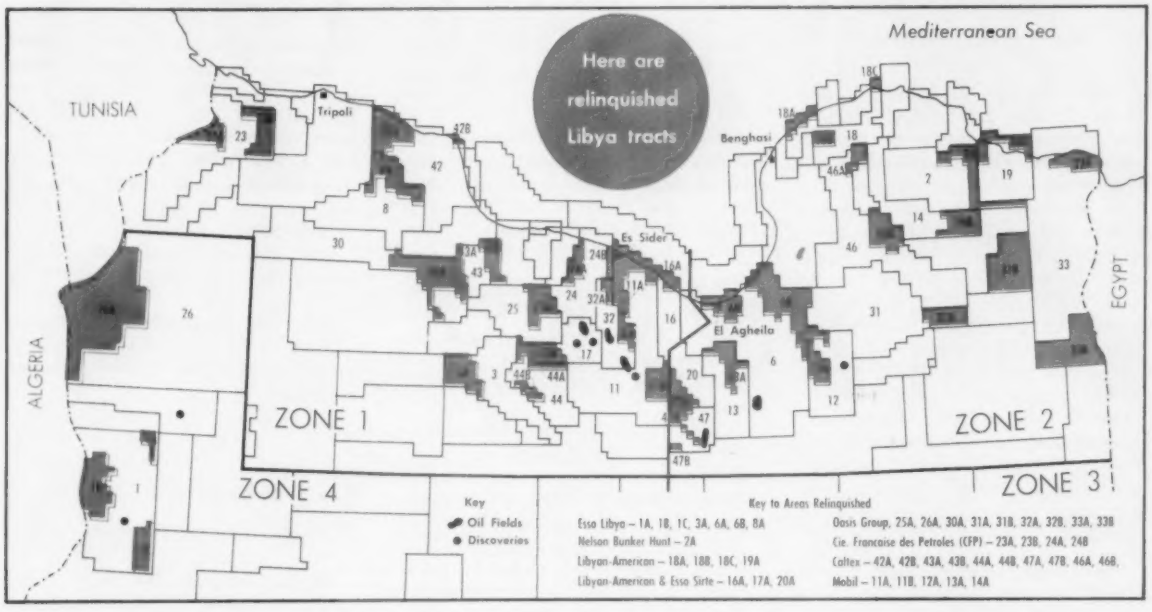
High-strength, stress-relieved sucker rod couplings designed to match the strength and performance of high-strength rods are now available from National Supply.

The design of the new coupling eliminates unused threads that formerly ran through the center of the coupling. This eliminates danger of premature failure from stress concentration at the roots of unsupported threads. The new National RC coupling has a smooth finish in this central area which blends into the last engaged threads, thus increasing fatigue strength.

Tensile strength has been increased to 130,000 psi by heat treatment. National RC couplings are available in four sucker rod sizes—⅝, ¾, ⅞ and 1 inch—and will be standard on National Grades 45, 85 and 92 sucker rods.

Get complete information on new National RC couplings by writing to National Supply Division, Armco Steel Corporation, 2 Gateway Center, Pittsburgh 22, Pennsylvania.

ARMCO National Supply Division


Here are relinquished Libya tracts
Mediterranean Sea
TUNISIA
ALGERIA
EGYPT
Tripoli
Benghasi
Es Sider
El Agheila
ZONE 1
ZONE 2
ZONE 3
ZONE 4
Key
Oil Fields
Discoveries
Key to Areas Relinquished
Esso Libya – 1A, 1B, 1C, 3A, 6A, 6B, 8A
Nelson Bunker Hunt – 2A
Libyan-American – 18A, 18B, 18C, 19A
Libyan-American & Esso Sirte – 16A, 17A, 20A
Oasis Group, 25A, 26A, 30A, 31A, 31B, 32A, 32B, 33A, 33B
Cie. Francaise des Petroles (CFP) – 23A, 23B, 24A, 24B
Caltex – 42A, 42B, 43A, 43B, 44A, 44B, 47A, 47B, 46A, 46B,
Mobil – 11A, 11B, 12A, 13A, 14A

Tight Libyan Land Play Loosens Up With Relinquishments

Has someone given up a potential Libyan oil field? Old Libyan hands think not, but there are newcomers ready to bet parts of their exploration budgets on the chance someone has.

That was the situation last week, following the first spate of acreage relinquishments in the North African kingdom.

Eight companies or groups had, by Dec. 31, surrendered 34,750 sq. mi. of exploration acreage, portions of some 26 tracts measuring 138,250 sq. mi. they had acquired five years ago.

Under Libya's oil law, they were required to return 25% of each tract, with a few exceptions for very small areas, to the Libyan Petroleum Commission. Another round of relinquishments, involving six more tracts, comes up this month.

There was no certainty last week that the boundaries of the tracts turned back so far would remain exactly as they are now drawn on the accompanying map that was released to PETROLEUM WEEK last week by the petroleum commission.

An industry spokesman noted that the concession holder has the right to determine what areas it returns. But, he said, the Libyans might ask companies to redraw some boundary lines so that relinquished sections of adjacent tracts might be joined. Thus, the commission could create larger and more desirable exploration tracts for future bidders, he said.

The companies that had to choose what sections to return made intensive exploration efforts to assure their decisions were right.

At least 70 wildcats were drilled on the tracts subject to the relinquishment procedure by the end of 1960. About 25 of these were on acreage later returned.

As one spokesman for a major company declared: "We took no chances. We drilled everything that looked promising."

In a few cases, exploration companies were able to write off areas without drilling. Seismic and geophysical work showed them to be unlikely prospects.

A few of the tracts subject to the recent relinquishment deadlines were among those on which substantial oil discoveries were made.

Esso's big No. 6 Block, where the prolific Zelten field is located, was one of these. But the company chose to give up two separate areas in the north of the block—areas 60 mi. or more from the Zelten wells.

Oasis group's Block 32, scene of the Bahi and Dahra fields, was another affected last month.

The group (composed of Amerada Petroleum, Continental Oil, and Ohio Oil), shaved off a piece coming within 10 mi. of some of its producing wells and handed it back.

Despite these past efforts, however, there is every likelihood at least some of the relinquished tracts will be sought for further exploration.

In the past year or so, a number of newcomers have made appearances in Libya. The firms include Pure, Sinclair, Sun, Superior, and Cities Service.

While these newcomers have been unwilling to disclose their plans, the general belief is they are getting ready to pick up some of the acreage turned back by the older hands.

One reason for this belief is that these companies have not so far bid on any still-untouched acreage. Another is that very little acreage—outside of the relinquished tracts—remains open for oil exploration. And most of this is in the far south of the desert nation, far from export sites and markets.

Industry sources are guessing that Libya will reopen the areas for exploration in mid-1961, just after a new round of returns falls due in May.

Venezuela Banks on OPEC Results

(From PETROLEUM WEEK'S *Caracas Bureau)*

CARACAS—Oil Minister Juan Perez Alfonzo has staked much of his controversial policy on the outcome of the OPEC conference here next week.

A nine-man delegation headed by Perez, and including a high-ranking military officer, will represent Venezuela in the talks, starting Jan. 15, with Venezuela's four Middle East associates in the Organization of Petroleum Exporting Countries—Iran, Kuwait, Iraq, and Saudi Arabia.

The president's appointment of a large Venezuelan delegation of varied composition is interpreted as an effort to line up support of influential sectors behind official oil policy, which has been widely debated in recent weeks (PW—Dec.30'60,p50).

The most sensitive topic on the OPEC agenda is discussion of oil prices, with reports on the action taken by the five member governments on the price resolution they adopted in Baghdad last September.

This called for efforts to restore crude prices to levels prevailing before last summer's cuts in the Middle East, and for prior consultation on any price changes between oil companies and their host governments.

All sessions of the Caracas meeting will be secret, Perez announced last week, as will all proposals presented by individual countries.

Except for undetailed "various matters," all other items on the unanimously approved agenda are organizational: decision on the OPEC draft charter; approval of a preliminary budget; designation of a General Secretary and an auditor; and place and date of the next OPEC general conference.

Perez has been given unqualified public endorsement by President Romulo Betancourt in his efforts to set up a system of market control by oil producing countries.

Betancourt himself has long favored some such system. In a New Year's state of the nation address, the president compared OPEC with existing systems for stabilizing the prices of coffee, sugar, and tin—a parallel intended to show that oil controls would not be a radical departure in international trade.

The president predicted that the OPEC meeting will develop a formula to prevent "ruinous competitive action" among oil producing countries.

Venezuela, Betancourt said, "will not abandon the effort" to sell its oil at high prices—"without putting limits on its exportation, but always providing that it is on conditions favorable to the Treasury and the nation, and therefore for the companies themselves."

Despite some skepticism indicated recently in the Middle East, Venezuela's Oil Ministry is confidently predicting that oil marketing policy will be modified as a result of the OPEC meeting.

The Ministry's weekly bulletin says the Caracas meeting will take "practical measures" to carry out the agreements approved in principle in Baghdad. The results, the Ministry said, "will modify in great part the marketing policy for oil, giving the countries that own it the intervention they deserve in all phases of a business to which they are essentially linked."

Venezuela, it added, "will struggle at the meeting to obtain a prudent adaptation of production to effective demand, to keep surpluses from exceeding what is technically necessary, and to prevent them from exerting undue pressure on prices."

Since Perez has virtually identified the national interest with OPEC, his position in Venezuela could be weakened if OPEC members are unable to agree on an effective means of controlling production and prices.

In that case, critics of the Oil Minister's policies will probably return to the attack in greater force. As one sign, the directors of the Federation of Chambers of Commerce & Industry—following talks with Perez—announced that they would delay their planned statement on oil policy until after the OPEC conference. The implication: Their position will depend on its outcome.

Riding on the outcome of the conference are the restrictive sales discount rules Perez has laid down for producers in Venezuela.

Oil companies here are reportedly selling crude at discounts in excess of the limits Perez has imposed. He would have to enforce his rules—or change them—unless adoption of some effective international control system by OPEC were to eliminate the issue.

Meanwhile, President Betancourt's recent statement on other aspects of oil policy in Venezuela have all been reassuring to private business here.

- Nationalization of companies by decree or law is not within our plans, either immediate or remote."
- The government considers that participation of the state and the companies in oil industry earnings is "satisfactory at present."
- The government will not permit oil industry strikes or illegal work stoppages.
- The new national oil company may contract with private companies for exploration and development operations.

BP Weighs Pullout From Papua Search

PAPUA—British Petroleum seems ready to follow Stanvac's lead and pull out of its expensive exploration venture in this Australian territory.

That report was current in Australia last week, following the abandonment of the 10,000-ft. Iehi wildcat by Australasian Petroleum Co., in which Stanvac and BP hold a total of 85% interest.

Representatives of the two companies and of a third partner, the Australian-owned Oil Search, Ltd., were slated to meet in London to discuss the withdrawal of BP.

The BP move, if it actually comes, will likely end a 22-year, $75-million exploration program which has seen 17 dry wildcats drilled.

Stanvac withdrew financial support just before the last wildcat was drilled. However, it retained a carried interest in the venture totaling about 42% because of its past financial support.

The withdrawal of BP would leave Oil Search, Ltd., which has a 15% interest, as the only participant. It is not considered likely that the company could finance more exploration without, at least, raising additional capital.

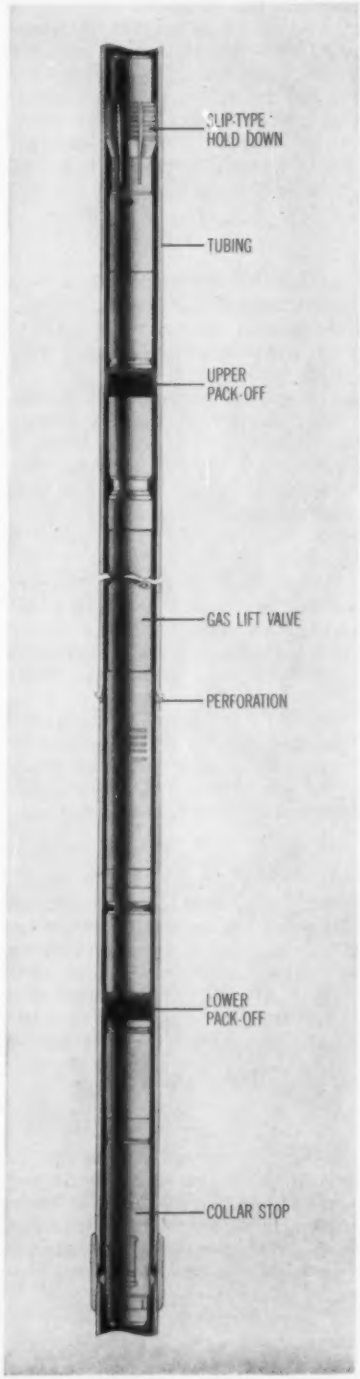
There is a chance, however, that the Australian government will take a hand in the Papua venture, by offering additional financial assistance to Australasian, Melbourne sources said.

Australia, intent on finding commercial oil in its territory, has given exploration subsidies to oil companies before, both on the mainland and in Papua.

SPECIAL REPORT TO MANAGEMENT

OTIS PRODUCTION NEWS

Volume II, Number 3 **Otis Engineering Corporation • Dallas** *Production Equipment and Services*

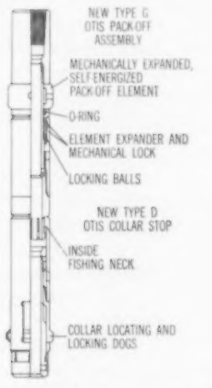


Cost-Conscious Producing Companies Endorse Otis All Wire Line Technique Of Converting Wells to Gas Lift

CORPUS CHRISTI—Eliminate the cost of a pulling unit to round-trip tubing when converting a well to gas lift and you can save an impressive amount of money per well. That's what several of the major producing companies in this area discovered when they started using the new Otis "All-Wire-Line" Gas Lift Conversion Technique.

A spokesman for one of these majors recently stated that his company is most enthusiastic about the technique — especially for water locations — because "(1) it's faster, (2) it's less expensive, (3) it's every bit as efficient as other types of installations they have made, and (4) it eliminates the risk of damage to the producing formation from contamination by mud and/or water in the annulus." Another company reported a savings of $60,000 in converting three, readily accessible, land locations.

As an example of how the technique can reduce the cost of a conversion, take a look at the following case history: A 6800-foot well located in approximately three feet of water in the Copano Bay Field ceased to flow naturally and was scheduled to be put on gas lift. In making plans to have the work done, it was discovered the approach canal had filled with silt and sand, which meant an expensive dredging operation would be necessary before a barge-mounted workover unit could be moved onto location; cost of a workover unit would be $1400 per day, and the annulus was loaded with old drilling fluid. Estimated conversion costs were mounting fast. A conference with the Otis Gas Lift Specialist in the area convinced the operator he should try a Type CG Otis Pack-Off Gas Lift Valve installation.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O-RING
ELEMENT EXPANDER AND MECHANICAL LOCK
LOCKING BALLS
NEW TYPE D OTIS COLLAR STOP
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Straight through, full opening bore of pack-offs, collar stop, and gas lift valve permits maximum production with minimum turbulence.

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After setting a circulating plug in the tubing at the spot indicated for the lowermost valve, perforating and circulating mud from the annulus, it took the trained Otis Wire Line Specialist only 15½ hours of wire line time to perforate and install five concentric Type C Gas Lift Valves between Type G Otis Pack-Off Assemblies and have the well ready to be put back on production. Eight months following the conversion, the well was still making its allowable in an economical and efficient manner. And to attest to the reliability of the new Type G Otis Pack-Off Assemblies, the well was being produced from the lower-most valve.

Otis Gas Lift and Completion Specialists are interested in helping you find a way to complete and produce your wells in the most efficient manner. The experience these men have accrued throughout the years is yours to draw from when faced with any down well completion or production flow control problem. Use the knowledge these men have to offer and you will find you'll be spending your production dollars more efficiently. For more information on the Type CG Otis Pack-Off Gas Lift Valve, call the Otis office nearest you or write Otis, Dept. 3-W, Box 35206, Dallas 35, Texas. You'll find your Otis specialists ready to help you — anxious to serve you.

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What's New / AROUND THE WORLD

JORDAN—Phillips formally announced last week that it is pulling out of exploration in Jordan, confirming reports prevalent in the Middle East for many months (PW—Jul.29 '60,p42).

Phillips said it is "releasing its acreage after extensive exploration, which included the drilling of six deep wildcats, all unsuccessful." Phillips acquired its first stake in Jordan under an agreement with Pauley Petroleum in 1957, subsequently taking over that company's rights over about one-third of the country.

•

INDIA—Rumania is offering oil products and exploration equipment in return for Indian iron ore under a ten-year agreement being negotiated in New Delhi. India is stipulating that the deal should not affect the normal trade between the two countries.

•

NEUTRAL ZONE—The Japanese completed their offshore drilling program for 1960 on target—with eight producers out of eight tests drilled. Potential of each of the two latest Khafji wells was given as 8,400 b/d, somewhat better than the 6,000-7,000 b/d average of the first six.

The initial shipment of crude to Japan has been delayed a month to mid-February. No decision is yet reported in Tokyo on the controversial proposal to prorate the crude among all refiners in Japan.

•

ITALY—Domestic oil demand will climb 63% in the next five years, the Ministry of Commerce & Industry forecasts. Its petroleum office estimates that demand for all products will reach 30.2-million metric tons by 1965, compared with an estimated 18.5-million in 1961 and 14.9-million in 1959.

•

VENEZUELA—Three companies have given up some of the tracts in southern Monagas, eastern Venezuela, for which they paid substantial bonuses in 1957.

Pan American, with Sun as ⅓ partner, turned back its $11-million Block 30, where it drilled two tests. And Creole gave up 49,000 acres, covering most of Blocks 31 and 32 and part of Block 10. It drilled five tests on the tracts, for which it paid bonuses totaling $19.6-million.

•

WEST GERMANY—The government boosted its quotas for imports of Russian oil in a 1961-63 trade pact, even though Soviet deliveries did not reach the 4.5-million-ton total provided for in the past three years. The new pact hikes the total quota for 1961-63 to 7.8-million tons, including 5.4-million tons of crude and 2.4-million tons of products.

•

ALGERIA—British Petroleum has its first Sahara gas show in the No. 1 Amasralad wildcat on the Oued Amenenad permit it holds jointly with French partners.

The well was tested at 176,573 cu. ft. per hour, with the gas flowing from a sandstone formation between 1,476 and 1,505 ft. Basement was reached at 2,477 ft. The well is now being completed.

•

COLOMBIA—Ecopetrol, the government oil firm, will enter the refining business Apr. 1 when a Jersey Standard affiliate's lease expires on the 37,250 b/d government-owned refinery at Barrancabermeja.

Mobil Oil technicians are in Bogota helping Ecopetrol set up a refining department to take over the plant, which International Petroleum has been operating under a ten-year contract.

•

WEST GERMANY—The Italian ENI group has launched German retail operations in Bavaria, with no sign yet of undercutting prices.

Agip, AG, the German marketing subsidiary ENI set up in Munich last spring, has opened its first service station there, selling gasoline at standard prices.

•

FRANCE—Thanks largely to its Sahara fields, French oil production jumped more than 300% in 1960 over 1959, preliminary industry estimates show. Production from Metropolitan France, Algeria, and Gabon was estimated at 220,000 b/d compared to less than 72,000 b/d in 1959. The Sahara's share rose to 162,000 b/d from 25,000 b/d in 1959.

$129-Million Sunk in Gulf of Paria

CARACAS—A five-company U.S. group is suspending operations in the Gulf of Paria on disappointing acreage for which it paid Venezuela $101-million in cash bonuses in 1957.

To date, the Paria Operations, Inc., group has spent another $28-million in exploration and development.

It's ready to pause for re-evaluation of its findings on the 152,000-acre offshore block held 25% each by Continental, Texaco, and Ohio Oil; 16⅔% by Cities Service; and 8⅓% by Richfield.

Eight producers have been completed out of 20 holes drilled. But their potential is relatively low, and development appears uneconomic at present, Venezuela's Oil Minister announced last week.

The producers include the group's initial wildcat, which found oil in April, 1958, near the international marine boundary with Trinidad. The other seven are development wells, drilled as deviated holes from a permanent 27-well platform.

Temporary facilities are currently being installed for further testing of the shut-in producers, of which the discovery well was the best. It was tested at rates close to 2,000 b/d.

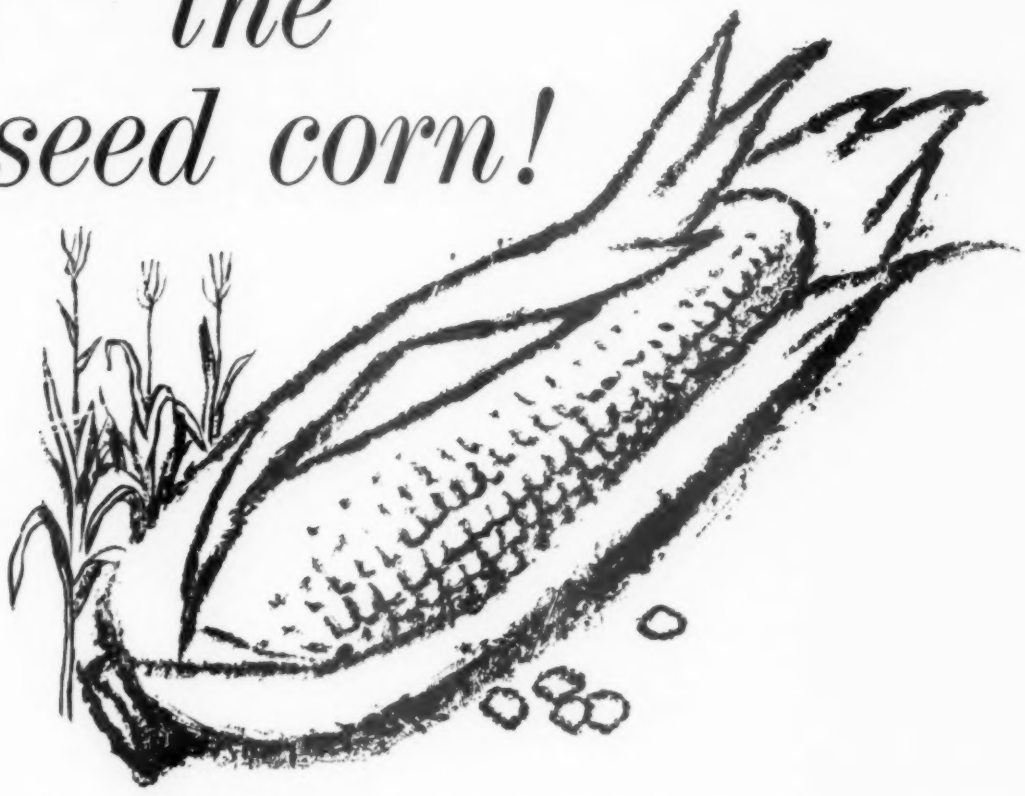
Besides the discovery well, only one other wildcat found oil out of a total of 13 (including one still being drilled last week)—and that was never completed, due to damage incurred in a storm.

The drilling operations to be suspended shortly were carried out by several contractors, and from various types of platforms—fixed, floating, and mobile, as well as the giant multiple-well unit.

Number 1 of a Series

TELL THIS PETROLEUM INDUSTRY FACT TO YOUR NEIGHBOR

Don't eat the seed corn!



From each year's harvest, a portion must be set aside as seed corn to assure a crop next year. Never sold, never eaten, the seed is the only guarantee against a famine.

The same is true with oil and gas. A new "crop" must be *sought* each year. Percentage depletion, commonly but erroneously called "depletion allowance," provides the seed that finances the search and assures next year's crop of oil. A substantial portion of each year's income must be set aside by the petroleum industry, as seed, to guarantee a continuing supply of oil and gas. This operating principle has made the petroleum industry a leader in free world enterprise.

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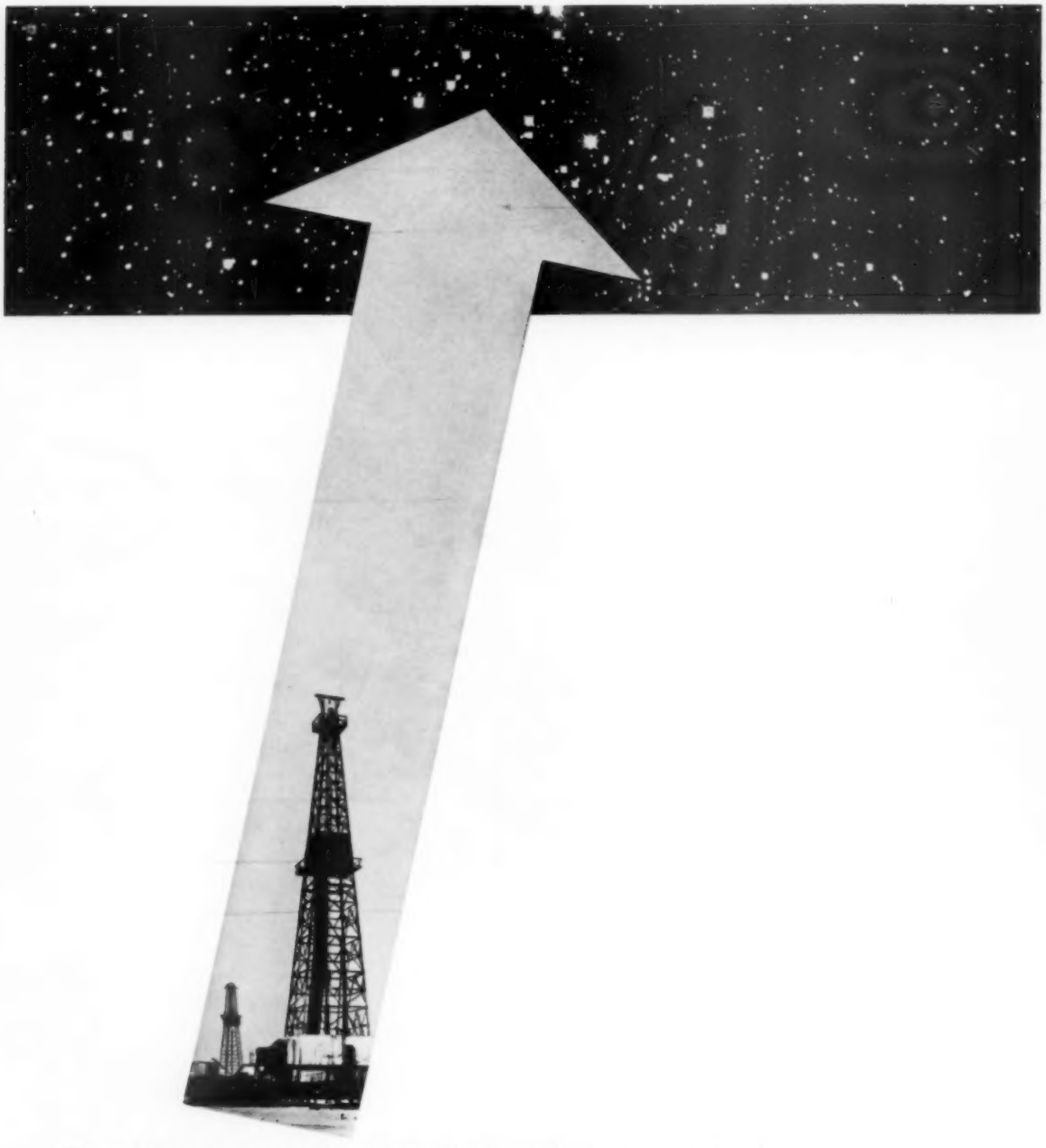

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Pipeline Built in 1929 Is Automated

Mountain Fuel Supply Co., of Wyoming, disdaining the notion that it's uneconomical to automate an old pipeline, is bringing part of its 31-year-old gas transmission system under remote control.

Several reasons are given for the contention that it doesn't pay to automate an in-place line. The chief one is that some old compressors—while perfectly operable despite their age—aren't designed for automatic startup, and that, therefore, it would be too expensive to convert them for this purpose.

Another reason is that some companies simply don't have confidence in automation equipment as yet, and presumably wouldn't install it even on a new line.

Mountain Fuel's project will bring seven of its stations under remote control at a cost of $75,000.

The system was designed and is being installed by the SIE Division of Dresser Electronics.

A Mountain Fuel engineer points out that the company had been waiting for suitable supervisory control equipment to be developed. "Now that the equipment is available, we don't feel that we could afford not to automate," he adds.

The company expects the automation to pay for itself in three years.

Control headquarters will be at Rock Springs, Wyo., where data will be received on mainline pressure, differential pressure, and valve positions.

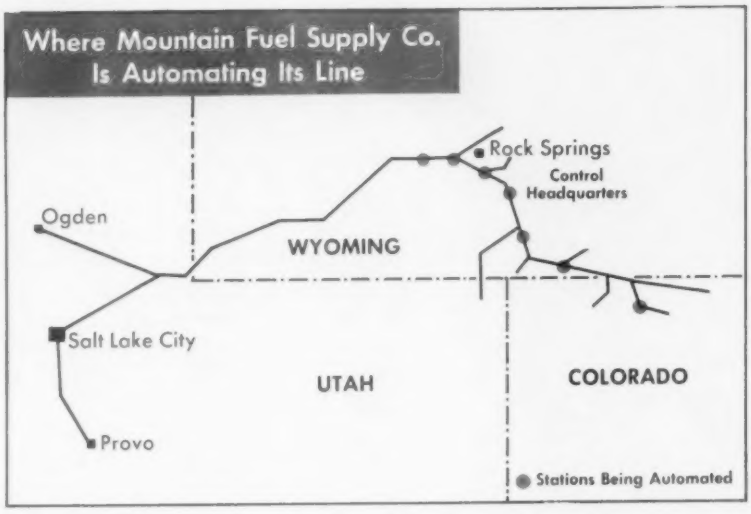
In addition, in case of a power failure anywhere along the automated portion of the system, control headquarters will be alerted.

Mainline and differential pressures will be automatically logged at each station on a preset schedule, which can be adjusted to print the information at intervals of from five minutes to four hours.

Besides the scheduled printout, a complete station printout occurs whenever a monitored variable exceeds either high or low limits. These off-limit quantities are printed in red, while other information is recorded in black.

When the control center receives notice of off-limit variations, an adjustment of the pressure will be made remotely.

Simplicity is the distinctive feature of the Mountain Fuel system. Some automations setups provide for the scanning of much more data—such as bearing temperature and water pressure.



Communication between stations and Rock Springs will be made over a "speech-plus" system operating over company-owned telephone wires.

A "speech-plus" system is one that permits voice communication, in addition to digital code transmission. On the Mountain Fuel setup, that portion of the audio spectrum which is below 2,700 cycles per second will be for voice communication, while the remaining part of the band will be for digital transmission.

Mountain Fuel explains that it now takes between four and six hours of telephone time each day for intercommunication between outlying stations and master station.

"Digital data-handling techniques will not only reduce the required transmission time," says J. K. Duvall, company engineer, "but will also insure the accuracy of the transmitted information."

Mountain Fuel has two main reasons for going to automation: Severe winter weather hampers manual operation; and the age of the line causes occasional leaks which can be spotted by a change in differential pressure.

In the event of a leak, Mountain Fuel will be able automatically to shut off the defective section of the line.

Another attraction, according to the company, is that automation will permit better use to be made of existing manpower.

"For example, we have had to have at least four operators on the job at all times at one station to regulate block valves," says a spokesman. "By automatically controlling the block valves along our system, we can cut down on the number of operators and shift them to other jobs."

Mountain Fuel may eventually extend the system to control a total of 20 stations on its 500-mi. system.

Its pipelines move about 110-million cf/d of gas from sources in Utah, Wyoming, and Colorado, to markets in Utah and Wyoming (map).

"We are also considering automation for other portions of our system in order to serve our customer needs even better than is presently possible with manual operation," a spokesman says, "We—along with most gas service companies—are planning to use automation as completely as is required to provide the best use of our facilities and men."

The company says that the equipment now being installed will be in operation by Feb. 1.

It is already planning the next step in its projected program, which probably will be the conversion of one compressor station to completely automatic local control some time this year.

The company says it is also "taking a close look at a comprehensive data-logging and transmission system for all operating and payroll data."

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What's New / IN TRANSPORTATION

California's Public Utilities Commission has given conditional approval to shipment of gas into the state by El Paso Natural Gas Co. and Colorado Interstate Gas Co.

The commission has O.K.'d the plan of Southern California Gas Co. and Southern Counties Gas Co. of California to buy the gas, but has withheld permission to construct the necessary pipeline until four conditions are met.

FPC recently authorized the construction plans of El Paso and Colorado Interstate, with the proviso that the O.K. should not become final until state approval is granted (PW—Jan.6'61,p39).

The main condition imposed by California is that a new supply contract must be negotiated with El Paso, which will eliminate the need for rate hikes during the early years of the project.

A spokesman for Pacific Lighting Corp., parent of the two California utilities, called the decision "disappointing," and said it may take a year to get final approval.

The line in California will run from Ivanpah to Placentia, and will have a maximum capacity of 600-million cf/d.

•

The Wyoming Public Service Commission has requested legislation authorizing it to regulate gas sales by interstate pipeline companies to industrial users.

In its biennial report to the state legislature, the commission said that such sales currently are outside its own purview and also that of the Federal Power Commission. The result, the PSC asserted, is that sales to industrial customers are free of any kind of price regulation.

•

New York State Natural Gas Corp. will expand its transmission system this year in anticipation of a rise in gas demand.

Projects planned include construction of 11 mi. of 30-in. line from the company's Ithaca (N.Y.) station into Cortland County; installation of several compressor engines; and the building of 35 measuring stations, together with 30.5 mi. of small-diameter lines, to serve new wells to be drilled this year.

Cost of new transmission and production facilities is estimated at $7,130,000.

The company expects its gas sales to climb by 10.8-billion cu. ft. this year, to 182.4-billion cu. ft.

Over the next five years, it predicts, sales will increase an average of 7.5-billion cu. ft. a year.

•

Twelve 22,000-gal. LP-gas tank cars have been delivered to Union Petroleum Corp., Tulsa, by General American Transportation Corp., Chicago. Union's president, W. W. Nixon, says the new cars, which will be added to the company's fleet of 11,000-gal. cars, "will provide greater flexibility in the distribution of LPG products to customers throughout the U.S."

•

A special study group on transportation problems, appointed by the Senate Commerce Committee, has recommended creation of a Cabinet-level Dept. of Transportation.

The task force also suggests consolidation of the Interstate Commerce Commission, Federal Maritime Board, and Civil Aeronautics Board into a central commission responsible to Congress.

A third recommendation of the group is that pipelines and railroads be freed from state-imposed property taxes on rights-of-way, the exemption to take place over a ten-year period to permit the states to provide offsetting revenue.

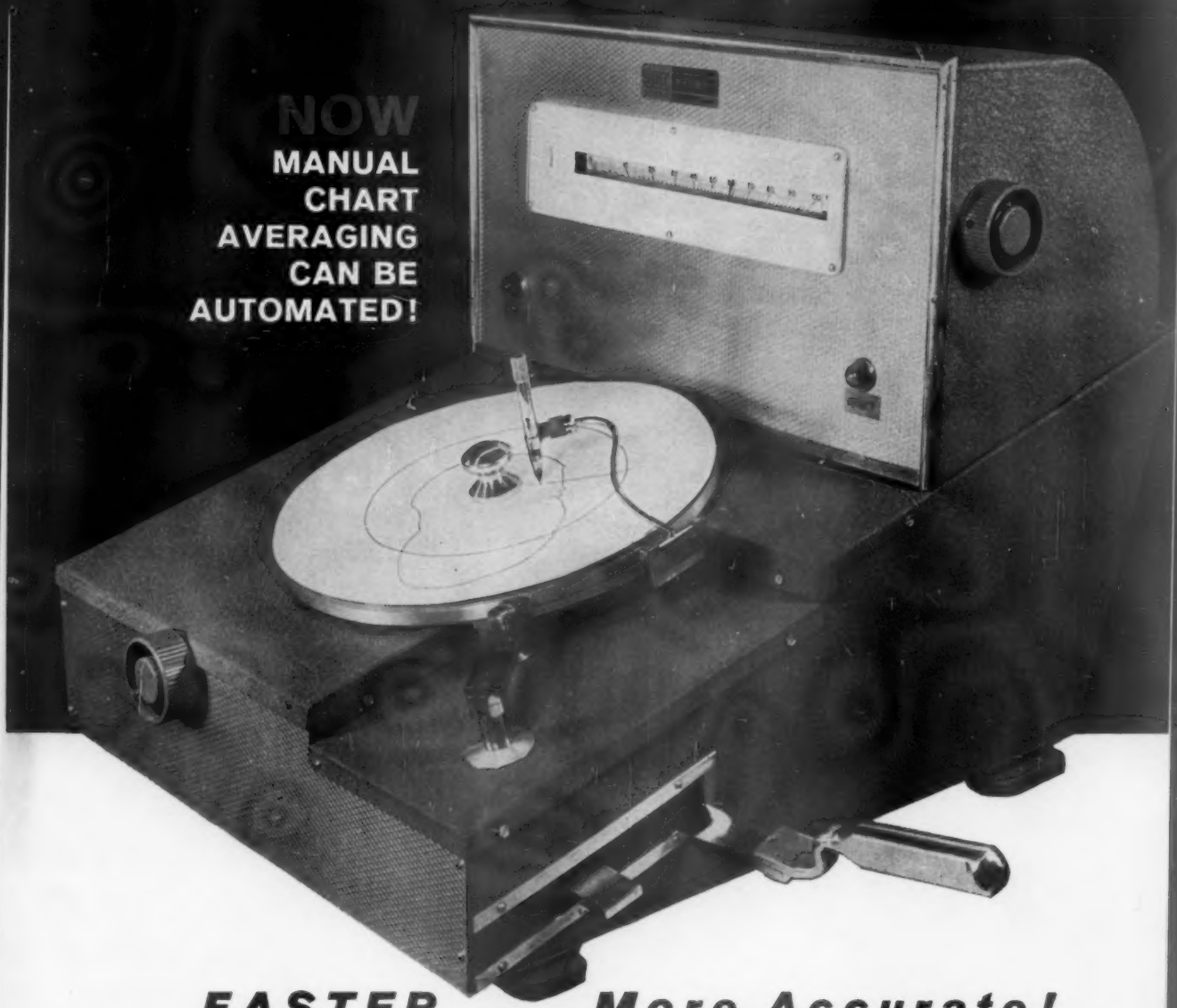
•

FPC has outlined the moves taken to cut its backlog of cases, in its 40th annual report to Congress, which covers the year ended June 30, 1960.

FPC listed these steps: shortening hearing times and records; instituting an interim-order procedure; and holding prehearing conferences.

•

FPC has authorized the acquisition by merger by Northern Natural gas facilities of Permian Basin Pipeline Co., its subsidiary. Northern Natural now owns 93% of Permian's common stock and 58% of the company's preferred stock.



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Useless Brands Must Get the Axe

By trimming down their list of products, refiners can reduce their manufacturing costs, lighten up their inventories, simplify distribution and sales.

To cut down manufacturing, distribution, and selling costs, refiners are redoubling their efforts to reduce to a minimum the number of their branded lubricants.

Even though oil companies have been trying to do this for many years, a PETROLEUM WEEK survey of major oil refiners reveals that the number of distinct products carried by each company is still much greater than is reasonably needed.

The lubricants specification books still carry from 1,000 to 1,500 different active grades and variations—and 90% of these make up less than 10% of the sales volume.

A substantial reduction of brands would result in many benefits to the companies. Among them:

- It would result in larger batch sizes.
- It would minimize blending operations.
- It would allow for more concentrated efforts on research for new formulations.
- It would cut down inventory of slow-moving products.
- It would simplify advertising, promotion, and selling efforts.

A reduction in the number of brands is also of advantage to consumers, because it causes less confusion, eases their own warehousing, and reduces the chance of error in the procurement as well as in the application of the correct lubricants.

A desirable minimum can be maintained either by constant vigilance, by periodic reduction programs, or by a combination of both of these methods.

For example, Shell Oil Co. recently dropped several hundred grades representing very small volume sales. It is currently considering the elimination of another few hundred, and it is evaluating another substantial number in the somewhat higher bracket.

"The 80-million vehicles in operation in the country," says Henry Muller of Shell's lubricants and special products department, "can perfectly well be lubricated with 16 grades of lubricants, with perhaps a maximum of another 16, required for special cases or for competitive reasons."

Esso Standard went through an extensive reduction program a few years ago.

"It took over a year to trim down our products specifications," says Walter White of Esso's sales engineering division, who is in charge of the program. "Now we have a strict control system to keep watch on the creation and the reduction of brands."

Such a control program is important, a major refiner points out, because the tailor-making of new lubricants, especially in the industrial field, is customer-generated, and often encouraged by salesmen who tend to follow a line of least resistance.

Socony Mobil Oil Co. recently created a division of its products department, at the corporate level, to coordinate brand-reduction activities. It is called the Product Control & Administrative Division.

"Control for profit is our motto," J. E. Denton, manager of the division, told PETROLEUM WEEK. "We deal specifically with the creation or abandonment of products motivated by our purpose to reduce to a minimum the number of products in our line, and to enhance the value of the remaining brands."

Multipurpose lubricants are very helpful in reducing the number of brands carried by a company.

"One of the reasons why multipurpose lubricants are getting so popular with refiners," says Esso's White, "is that, once they have gained consumers' acceptance, they make it possible to consolidate several products into one."

A close liaison between the sales organization and the technical services is essential if a minimum, but comprehensve, line of products is to be retained.

"Fewer products," Mobil's Denton says, "mean less cost to maintain them, research-wise and quality-wise. We work in constant cooperation with the technical personnel of our products department to keep our list of authorized brands at top quality."

A critical survey of available brands, with a view to avoiding unnecessary duplication, is a "must" whenever companies merge, reorganize, or enter into joint ventures.

Great care, involving common sense and allowing for plenty of time, must be exercised, particularly when international markets are concerned.

"Consumers in certain foreign countries," says Denton, "may be very familiar with Standard Vacuum's Gargoyle emblem, much less familiar with Mobil's Flying Red Horse. It would be most unwise to go through a consolidation and reduction program rashly."

The cooperation of equipment manufacturers is essential whenever a brand reduction program is undertaken.

Builders are gradually coming to realize that more uniform recommendations for lubricants that satisfy their equipment is an advantage, for them and for their customers, in peace time as well as during a war.

And consumers must be made to understand that this brand reduction program should in no way degenerate into a "specifications system" that would jeopardize brand identity.

Specification buying, all refiners agree, is the worst type of buying that a consumer can adopt, because specifications necessarily must include the lowest possible grade of product that is still acceptable for the job. Reputable oil companies always offer brands that are well above these minimum requirements.

This recent trend towards reduction of closely similar products is not confined to refiners; it is also noticeable among manufacturers of petrochemicals.

For example, the Aquaness Dept. of Atlas Powder Co., in Houston, is currently engaged in the task of reducing the number of its Atlasol compounds—mostly based on ethylene oxide—used in oil fields as demulsifying agents.

There are about 80 separate compounds, and almost limitless combinations of them. Laboratory tests, conferences with manufacturers of drilling equipment, and work in the field with the drillers are all being used in an attempt to reduce this diversity to a reasonable size.

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Speed Boosts Computers' Utility

Modern computers that can perform several programs simultaneously are gaining wider acceptance in refineries and processing plants.

A computer that is used principally for a certain purpose, either in the refinery, the office, or the laboratory, usually has a considerable portion of "free time." It is, therefore, important that it can interrupt its task at any set point, handle another program, or part of a program, then return to its initial job exactly at the point where it left off.

Many computers today are built to do multiple-program duty, under control of either an operator, an automatic timer, or even another computer located elsewhere.

In order to perform such multiple-program duty efficiently, the computer should operate at extremely high speeds.

One of the latest developments, disclosed at the recent Eastern Joint Computer Conference, in New York, was the "thin magnetic film memory" of the Univac 1107, the new computer of Remington Rand Univac Division of Sperry Rand Corp.

This computer operates in billionths of a second, instead of the conventional millionths. The thin-film memory is used in this computer in addition to its usual magnetic core memory storage.

It consists of a series of metal dots a few millionths of an inch thick, made by depositing vapors of some ferromagnetic metal, under vacuum, and in the presence of a magnetic field upon a thin glass plate. This "array" is then laid against a very delicate copper circuitry, etched on Mylar.

These elements are so compact and have such fast switching speeds that they make it possible to build smaller —and less expensive—computers having much greater capability and versatility than have been available before, Remington Rand says.

Many companies have been working on the development of high-speed memories during the past few years.

Walter W. Finke, president of Minneapolis-Honeywell's Electronic Data Processing division, points out that his company is now designing thin-film memory computers for specialized airborne applications, and will eventually incorporate such high-speed memories in its electronic data processing systems.

These high speed computers for multiple-program duty occupy relatively small floor spaces.

Thin-film will be combined with miniaturization, according to Minneapolis-Honeywell, and this will probably lead to smaller over-all sizes and lower costs.

A further advantage of modern computers is that more and more of them use a common business or scientific language.

Common business oriented language (COBOL) is becoming acceptable to an increasing number of competing computers, with the result that data processing systems are becoming interchangeable among computers of various makes.

A demonstration of data interchangeability between computers was given recently when a Univac computer in Remington Rand's Philadelphia engineering center and an RCA 501 computer at Radio Corp. of America's Cherry Hill (N.J.) center were given the same set of programs, utilizing COBOL, and came out with identical results.

Two different operating programs were solved successfully.

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What Future for Plastics in Autos?

A bright picture was painted this week of the future of reinforced plastics—of petrochemical origin—as structural materials in the automotive industry.

Engineers from J. P. Stevens & Co., Inc., New York, gave their concept of the car of the future at the International Congress & Exposition of the Society of Automotive Engineers, in Detroit.

Some of the dynamic changes that are inevitable in automotive structures of the middle '60s were discussed, on the basis of:

(1) What had been accomplished so far with plastics in the automotive industry.

(2) The possibilities that structural plastics of today and tomorrow offer to the engineer and body stylist in the decade ahead.

The first stage—or "generation"—of reinforced plastics did pretty well, in spite of the usual resistance to a nontraditional material and the lack of familiarity with its uses, the Stevens technicians remarked.

At the SAE Exposition, there was a 1954 Chevrolet Corvette on display, with fiber-glass-reinforced plastic body, which, after 150,000 mi. of constant use under all types of weather and road conditions, showed no deterioration.

Other auto parts made of plastics during this "get-acquainted" period of piecemeal use were: various plastic car tops, well-insulated against heat and sound; the high-density polyethylene heating duct of the 1961 Chevrolet Corvair; plastic instrument clusters on the Valiant and on certain models of Buick and Dodge; polyethylene kick boards on certain Fords; and polyester resin engine hoods and trunk lids in several European cars.

In the next stages of plastic development, radical departures from conventional design, engineering, and processing techniques will take advantage of the spiraling technological progress made possible by the use of high-strength structural plastics.

For example, the Stevens engineers said:

- New concepts of shapes, convolutions, re-entrant curves, can be ingeniously designed and readily fabricated with molded plastics.
- Revolutionary bonding techniques will replace present joining methods.
- Strength and rigidity can be "molded in," not added as extra framing, stiffening, and gussets.
- Advantage will be taken of the very light density of plastics, combined with their great strength, to make more compact cars with more inside room, more flexibility, and greater maneuverability.

The implications of reinforced plastics on tooling costs and tooling flexibility in auto body manufacturing are quite significant.

Because of the relatively low cost of molds—as opposed to the tools, dies, and presses used in metal bodies—it becomes perfectly feasible, the Stevens men pointed out, to modify components of the body structures between model years, if this proves desirable.

At the same time, through the use of large, one-piece moldings, a major breakthrough in body-building automation can be realized.

Manual labor can be minimized and mechanization improved.

However, much work remains to be done, starting with the polymer chemist and culminating with the plastics engineer, the Stevens experts said.

New Use for an Old Process

Petro-Tex Chemical Corp. is building a new plant in Houston, where an old laboratory reaction will be put to commercial use: Tetrahydrophthalic anhydride (THPA) will be produced from butadiene and maleic anhydride.

Petro-Tex is in a favorable position to make use of this Diels-Alder reaction; it has both raw materials available.

Butadiene is one of the company's old specialties, and maleic anhydride will be produced, at a rate of 30-million lb. per year, in a plant now under construction adjacent to the Houston butadiene plant.

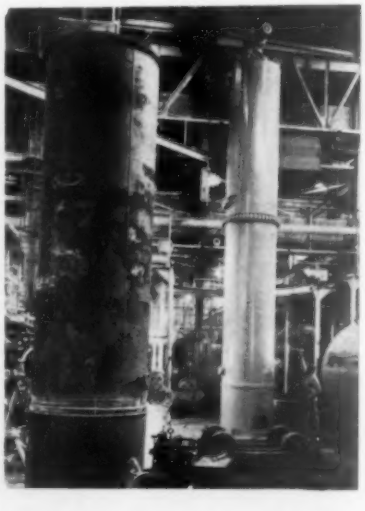
THPA is somewhat similar to phthalic anhydride—it simply contains four more hydrogen atoms in the benzene ring. It will be used for the same purposes, but it has superior qualities, according to Petro-Tex. Like phthalic anhydride, THPA will be used to make alkyd resins, polyesters, and plasticizers. But when these resins are used for paints and coatings, says Petro-Tex, they have better initial color, better color retention, and better adhesion qualities.

"We feel that THPA, upon commercialization, will be competitive with other conventional dibasic acids and anhydrides," says Petro-Tex.

Initial price of THPA will be 39¢ per lb., against 19¢ per lb. for phthalic anhydride.

It is expected, however, that quantity production will make it possible to reduce this price substantially.

Glasteel Keeps Polymer Flowing



A process vessel 32 ft. tall, with a hanging agitator 24 ft. long, is being installed at the Port Neches (Tex.) plant of Goodrich Gulf Chemicals, Inc.

It will be used for the processing of high-density polyethylene.

Both the vessel and the agitator are made of Glasteel, a material of glass bonded on steel which is made by Pfaudler Co., a division of Pfaudler Permutit, Inc. Pfaudler is constructing the Goodrich-Gulf unit.

Glasteel is used for a double purpose: It protects the equipment from corrosion and the product from contamination, and, because of its extremely smooth finish, it keeps the sticky mass of polymer from adhering to the surfaces.

The process vessel is designed to operate at temperatures up to 300F, and pressures from vacuum to 75 psi.

AT COSDEN . . .

After five years' experience in operating Combin-aires, Cosden Petroleum Corporation, at its Big Spring refinery, has installed its FOURTH Hudson Combin-aire.

The Combin-aire is an integrated structure combining a water cooling tower with fin-tube hot fluid to air exchangers. Ambient air is cooled as it is drawn thru the water, and the cooled air serves as the cooling medium for the fin-tube coolers. Thus, with fin-tube coolers, effluent process stream temperatures may be reduced far below those obtained with ambient air.

The Combin-aire may be used primarily as a cooling tower, with the advantages of double use of air, and, because hot effluent air is undersaturated, complete elimination of spray carry over or condensation. Or when water is scarce, or salt, or brackish the Combin-aire may be used primarily for fin-tube cooling, using minimum water of any quality for pre-cooling air.

DEPENDING UPON DESIGN OBJECTIVES THE COMBIN-AIRE MAY HAVE SOME OR ALL OF THE FOLLOWING ADVANTAGES:

- Absolute minimum water consumption consistent with attainment of low terminal process stream temperatures.
- Water circulation may be made automatically responsive to air temperatures with no water circulated except at high ambient temperature.
- No water treatment necessary. Salt water or brackish water may be used.
- No spray carryover or condensation. After passing across the fin-tube elements the heated air leaving the Combin-aire at elevated temperature is undersaturated with water vapor and cannot precipitate condensate or carry water spray.
- Minimum piping. Combin-aire may be installed immediately adjacent to other process equipment.
- Clean air to fin-tube units. During the hot season air is washed, removing dust, sand and insects.

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What's New

IN PROCESSING

A horizontal fractionating column with rotating impellers will soon be manufactured and marketed by Vulcan-Cincinnati, Inc. The Recumbent Column Rectifier will, in fact, be a horizontal version of the Rotary Tray Fractionation Column manufactured by the same company (PW—Jan.6 '61,p35).

The RCR was invented by E. C. Eckey, of Cincinnati. It is said to be able to reduce the large reflux heat load required by conventional vertical towers to create counterflow circulation, to perform vacuum fractionation with certain products that cannot be handled in vertical fractionation, and to increase efficiency.

•

Suntide Refining Co. will add a 30-million-lb.-per-year ethylbenzene separation unit to its petrochemicals facilities at Corpus Christi. Badger Mfg. Co. will begin construction in March; completion is set for July.

The new unit will be a further separation step of the mixed xylenes produced in a Udex unit recently constructed at Corpus Christi; it will operate in conjunction with the Udex unit and an orthoxylene unit.

•

New facilities to be built at Murphy Corp.'s Superior (Wis.) refinery will increase production of high-quality gasoline and reduce output of residual fuel. Capacity is expected to expand only slightly.

Construction will include a 5,000 b/d cat cracker, a 1,200 hydrofluoric acid alkylation unit, and a 400 b/d expansion in distillate fuel desulfurizing capacity. Gasoline treating capacity will also be increased, from 1,500 b/d to 4,500 b/d.

•

A new $1-million carbon monoxide boiler and extraction steam turbine will supply power for major units at British American Oil Co.'s Clarkson (Ont.) refinery, near Toronto.

The boiler will provide power for a recently completed alkylation unit, and for future facilities at Clarkson. It recovers heat and disposes of waste gas by burning carbon monoxide and hydrocarbons produced during catalyst regeneration. It reduces atmospheric pollution substantially.

(Acid) bubble bath can't etch concrete floor coated with NEW GLID-CRETE

Floors "floored" by acids and chemicals? Here's the answer . . .

New GLID-CRETE, based on a catalyzed epoxy resin, used to patch or resurface concrete floors was given the acid test. A 50% solution of hydrochloric acid was poured on bare concrete and on concrete topped with an ⅛" of GLID-CRETE. The concrete was badly etched. GLID-CRETE was unharmed—and will stay that way!

Easy to apply with spray or trowel, GLID-CRETE, is six times more abrasion and impact resistant than concrete. It offers many outstanding advantages in the maintenance, repair and construction of masonry floors and structures.

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Small Craft Become a Puzzling Market

Small craft manufacturers—who are becoming almost as important as auto manufacturers to demand conscious marketers—have headed in a variety of new directions this year.

In order to supply this growing market, the oil marketer needs to watch the shifting fuel requirements more closely than ever.

This becomes apparent when one reviews the new boats placed on display at this year's National Motor Boat Show in New York.

Probably the most important news for oil marketers is a halt in the outboard horsepower race.

This race, which was still being run among boatmakers at last year's show, has given way to increased attention to refinements and accessories that offer higher engine efficiency.

Only two boat manufacturers are displaying higher-powered outboards this year. But the top horsepower rating for all exhibitors has held at 80 hp. Today outboards average around 27 hp., compared to 3 hp. in 1940.

The end of the outboard power race figures in the over-all accent on operating economy in the boating market.

One of the most talked about advances this year is the combination inboard-outboard boat that offers the fuel economy of inboard engines to outboard enthusiasts.

In this innovation, an inboard engine (which burns 50% less fuel than a corresponding outboard and requires no oil mixing) is mounted on top of an outboard drive shaft.

Another trend to watch is the adaptation of compact automotive engines to the small-craft field.

Until last year, there were no automotive engines produced in this country that were suitable for low-power pleasure boats.

This year, a completely new type of marine power enters the boating market. It is a turbine engine manufactured by Boeing Airplane Co.

With an operating simplicity that matches the company's jet aircraft engines, the marine turbine operates through air compression.

The engine will draw in air, heat it, and force hot gases through a turbine wheel. It will run on diesel fuel, but can be adjusted for unleaded gasoline, kerosine, alcohol, jet fuel, and, if need be, regular automotive gasoline.

GAS TURBINE POWER BOAT, built by Boeing Airplane Co., introduces a new dimension to the pleasure boating market. The boat can burn almost any typical fuel.

Boeing's innovation follows hard upon the world's first diesel outboard which was introduced last year.

It was the first time that the safer diesel principle had been adapted to outboard engines. Manufactured by American Marc, Inc., the engines are now being produced at the rate of 40 units a day. The company, which had to overcome a structural flaw early last year, expects this rate to move to 85 when the peak season begins in late March.

About 45% of the diesel outboards (which are generally heavier and costlier than regular outboards) are finding their way to the Great Lakes region.

The new trends in small-craft manufacture serve to emphasize one of the chief problems in supplying this market: the multiplicity of fuels.

If a marina operator wants to be fully equipped to serve the boating enthusiast, he would need the following fuels: regular gasoline, premium gasoline, white (nonleaded) gasoline, a mixture of gasoline and oil, diesel fuel, and (if the turbine catches on) kerosine.

Most often, of course, the marina operator stocks only a few varieties. But this often creates ill-will among boating enthusiasts.

Diesels comprise a small percentage of the inboard pleasure fleet, but they are growing proportionately.

Outboard users have always had to mix their own fuel, but now more companies—and even marina operators themselves—have attempted to market premixed fuel. Mobil Oil Co. has been testing this for the past four years. Union Oil Co., on the West Coast, reports a budding demand for its supplies.

Two of the country's top outboard manufacturers are locked in a debate over the need for white (unleaded) gasoline.

The debate has the oil industry waiting on the sidelines, hoping that it will be resolved one way or another.

Carl Kiekhafer, head of Kiekhafer Corp., is at the center of the controversy. His company feels that leaded fuels are not suitable to two-cycle engines because they create lead-fouling when run at the usual, full-throttle speeds of outboards.

Outboard Marine Corp., on the other hand, has said that it believes the white fuels are not necessary for outboard performance.

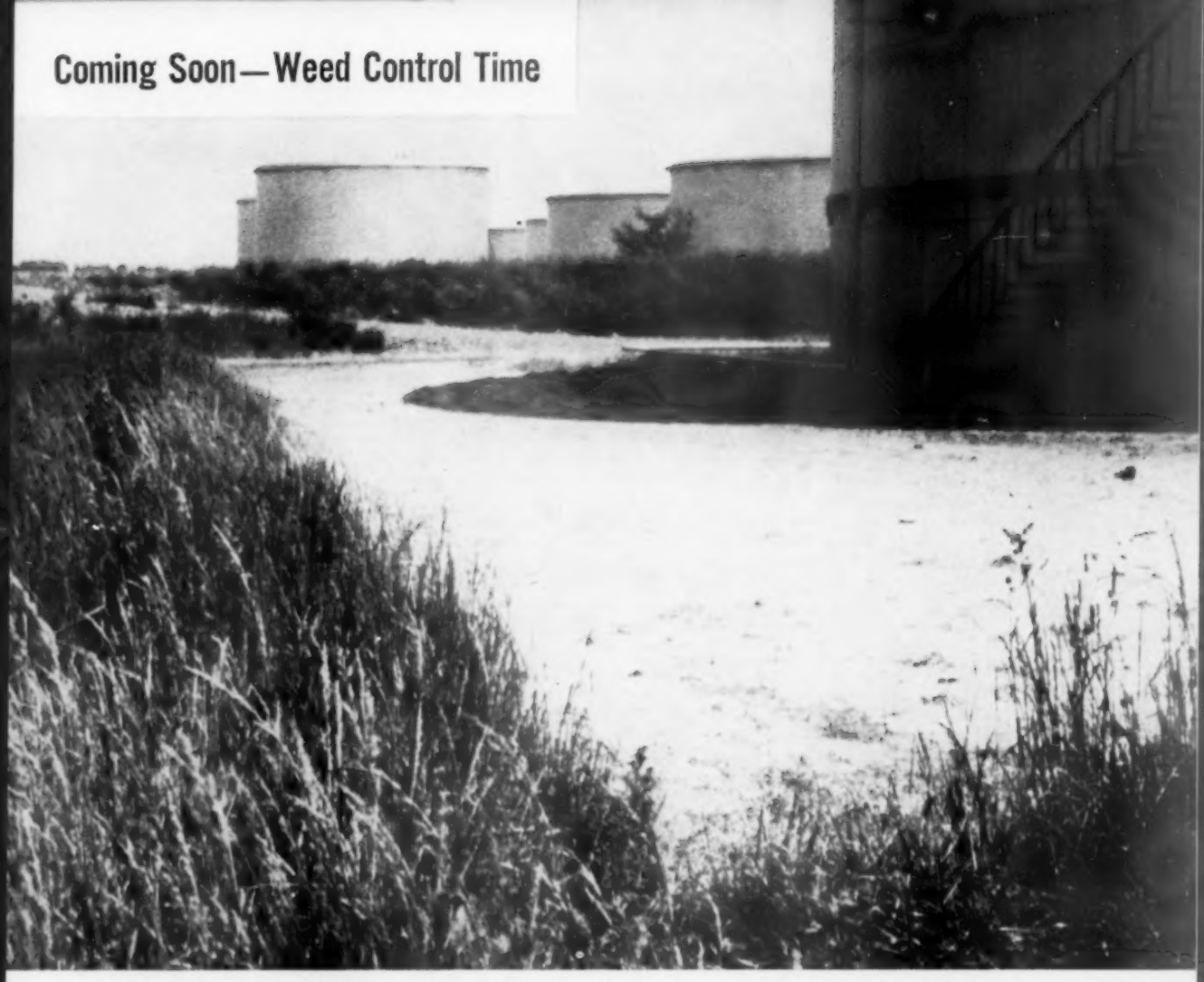
Oil marketers can't promote one over the other until they know what these two boat companies decide.

This year, efforts are being made to stimulate renewed interest in motorboat rentals. If successful, this could add even greater importance to the small-craft market.

In the past, attempts to promote this market have failed because of two reasons: (1) The season for rentals is short, hardly more than ten weeks in the Northeast, and (2) rented boats wear quickly, often requiring replacement within one year.

At American Yachting Systems, Inc. in Roslyn, N.Y., Sydney Ochs,

Coming Soon—Weed Control Time



The Tidewater Oil Company obtained excellent weed control around storage tanks at their Delaware Refinery by spraying Du Pont Karmex® and Du Pont Trysben® 200. The area was sprayed in the fall of '59—the photograph taken early fall of '60.

Spray a Du Pont Weed Killer once—soon—to eliminate the hazard from fire

Best way to control weeds is to prevent them from getting established. Spray key areas with Du Pont Telvar® monuron or "Karmex" diuron weed killer—just once—right at the start of the season. That way, weeds will be killed, as soon as they sprout, by these chemicals which stay in the soil for an extended period of time to kill through the roots. In addition, spraying early gives you an entire season of freedom from the fire hazards and maintenance difficulties caused by weeds around tanks, pipelines and well areas.

Du Pont also has the answer to the problem of deep-rooted perennials with "Trysben" 200 weed killer. This new weed killer controls tough, broad-leaved perennials by acting through both roots and foliage.

All three of these Du Pont Weed Killers are easy and economical to use. They are also non-flammable and low in toxicity to humans and animals.

Why not plan this year's weed control program right now—and spray soon? A new booklet on Du Pont Weed and Brush Killers and free technical assistance is also available. Just mail the coupon.

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president, has introduced a program that many believe will succeed where other attempts have failed.

Ochs has designed a steel boat that is especially made for renting. It is said to be sturdier and (with a hull that shields the propeller) it offers greater safety than most other boats.

Ochs plans to shuttle his boats (by barge) between Long Island and Pompano Beach, Fla., where he has another marina. In this way, he hopes to lengthen the season for boating to as much as 30 weeks.

Last year, with hardly a dozen boats, Ochs turned away three times as many would-be sailors as he could accommodate. But Ochs is expansion minded and plans to build as many of his boats as he can find capital for.

New Antifreeze Trend a Dud?

"They certainly laid an egg." That's the reaction of one oil marketer to the performance this winter of the new superpermanent antifreezes. This view is typical.

As early as July, oil marketers interviewed by PETROLEUM WEEK were pessimistic about the potentialities of the new products (PW—Jul.29'60,p 46).

Now their forecasts seem to have been borne out. None of the new products—chief of which are Du Pont's Telar, Dow Chemical Co.'s Dowgard, and Union Carbide Corp.'s Long Life Prestone—made an appreciable dent in antifreeze sales.

Most TBA managers in major companies doubt that new products comprised as much as 5% of the total 1960 sales of antifreeze at their stations.

Many companies say that their dealers were urged to take Dowgard on consignment. But their success with the product was so poor that they returned most of it.

Each of the new products offers summer cooling and corrosion protection, in addition to antifreeze protection in winter. This means they need not be drained in the spring.

Du Pont actually goes much further than this: it says its Telar can be left in the radiator forever—as long as it doesn't change color. A color change—from red to yellow—means that corrosion had started.

Union Carbide's product offers "extra-long protection," but the company was never enthusiastic about the product. It candidly admitted that it had introduced Long Life Prestone just to compete with Telar.

As for Dowgard, one of its main features is deionized water, which is a better corrosion inhibitor than ordinary tap water.

The main drawback of the coolants was their price. Each required motorists to plunk down as much as $10 or more for something they were used to spending less than $5 on.

The fact that the coolants would last through the summer and (in the case of Telar) many years thereafter didn't seem to impress motorists, marketers report.

It is the feeling of marketers who watched antifreeze sales this year that the regular permanent type of antifreeze—with its ethylene glycol base—satisfies consumer demand. Very little of the nonpermanent type, with a methonal base, is sold today—only about 10% of total sales.

One explanation is that these two types are not far apart in price. But to urge motorists to buy up to Dowgard or Telar requires more salesmanship than dealers are willing to exert, marketers believe.

Here are other random "explanations" for the poor showing of the new antifreeze products:

- They required meticulous installation, which many dealers were unwilling to bother with.
- Many motorists leave their regular antifreeze in their cars over the summer. Consequently, they saw no advantage in the higher priced coolants.
- Dealers couldn't be expected to promote a product that would cut down on their seasonal changeover sales.

Despite the slow sales this fall, both Du Pont and Dow look forward to greater acceptance of their products next season.

D. S. Reinhardt, assistant sales manager for Du Pont's Telar, says, "There are many people who have accepted it; there are many who still need to be educated. We think we have a two- to three-year educational job ahead of us."

Dow plans another strong promotional campaign for the spring and fall of '61.

Car Fritts, Dowgard brand manager, says, "We've established the beachhead we set out to get, and this year we're ready for penetration of the market in depth. We're on schedule with our time table."

What's New
IN MARKETING

Socony Mobil Oil Co.'s acquisition of Anchor Petroleum Co., Tulsa-based LP-gas distributor, is more unusual than it appears at first glance. This is the first time Mobil has ever acquired an LP-gas wholesaler.

There's something else that is unique: Through the purchase, Mobil obtains Petrolane Gas Co., Inc., New Orleans, which offers the major its first toe-hold in the retail LP-gas market.

This acquisition follows a similarly unprecedented move by Tidewater Oil Co. last fall. Tidewater bought Vangas, Inc., Fresno (Calif.) LP-gas distributor.

•

A dealer association in Butte, Mont., has pledged its membership to drop trading stamps. Meanwhile, four stamp companies in Cheyenne, Wyo., have asked the Wyoming Supreme Court to reconsider its stand against stamps.

All but one of the members of the Silver Bow Retail Gasoline Dealers Assn. have agreed to give up stamps. The stamps' bite into a too-small profit margin was given as a major reason for the move.

In Wyoming, where a ban on stamps began Jan. 1, the Supreme Court was petitioned for a rehearing in the law prohibiting the stamps. (Hearing is set for Jan. 16.)

Sperry & Hutchinson Co., Pioneer Trading Stamps, Inc., Gold Bond Stamp Co., and National Gift Seal Co. all contend that the law prohibits business.

•

The threat to Mobil Oil Co.'s wide-area pricing plan in Rhode Island seems to have abated.

Last week Mobil raised its statewide tankwagon price by 0.9¢ a gal. to 14¢. It was the first increase since Sept. 9, when Mobil reacted to price cuts by Texaco stations (PW—Sep.23'60, p116).

At that time, Mobil cut its tankwagon price by 1.6¢ a gal. (to 13.1¢), practically wiping out all the gain achieved under wide-area pricing.

•

The octane ratings of both premium and regular gasolines remained unchanged in December, according to Ethyl Corp.

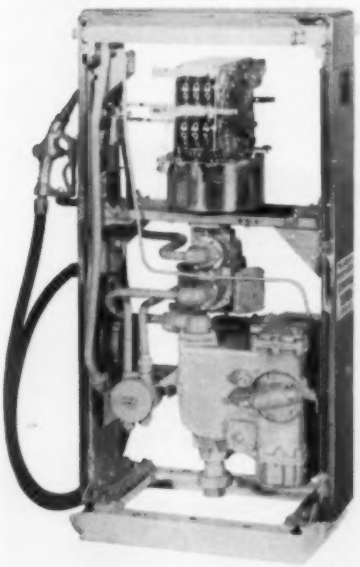
Premium averaged 99.3-octane and regular was 92.6-octane.

The New Wayne 440

Only 51 in. high, internally lighted, finished with liberal use of chrome and stainless, the new Wayne 440 Series is designed to attract customer attention day or night.

Lights your island brighter than any other pump made

Behind the panels...reliable Wayne componentry



Simplified M-56 Computer has 200 fewer parts than its predecessor, assuring trouble-free operation with minimum maintenance. Exclusive safety clutch on reset inkage prevents computer damage or shaft distortion.

Famous Wayne 2PM-3 2-Piston Meter provides a smoothness of operation unknown in other designs. Micro-accurate even at slow rates of flow. Built for extreme corrosion resistance.

Solo pumping unit gives true continuous-duty pumping under all operating conditions—at no extra cost. Completely self-contained. Most reliable unit found in any island pump.

Behind the bezel above each dial face of the new Wayne 440 Series Pump is a 24-in. fluorescent tube. These two lamps bathe the dial faces—and the surrounding island area—in a clear white light, making auxiliary lighting unnecessary. In fact, the Wayne 440 provides more illumination than any other pump on the market.

This pump draws business. Its compactness and clean design imply an efficient, up-to-date station operation. And lighted, it provides the kind of visibility that is psychologically attractive to the motorist at night. It takes minimum island space, too, allowing you more TBA display without congestion—a profit angle not to overlook.

The Wayne 440 is made as a single outlet, 2-outlet single-product, or 2-outlet 2-product pump in either suction or remote types.

Wayne

WORLD'S LARGEST MANUFACTURER OF GASOLINE PUMPS AND SERVICE STATION EQUIPMENT

THE WAYNE PUMP COMPANY • Division of Symington Wayne Corporation • Salisbury, Md. • **WAYNE PUMP CANADA, LTD.** • Toronto, Ontario

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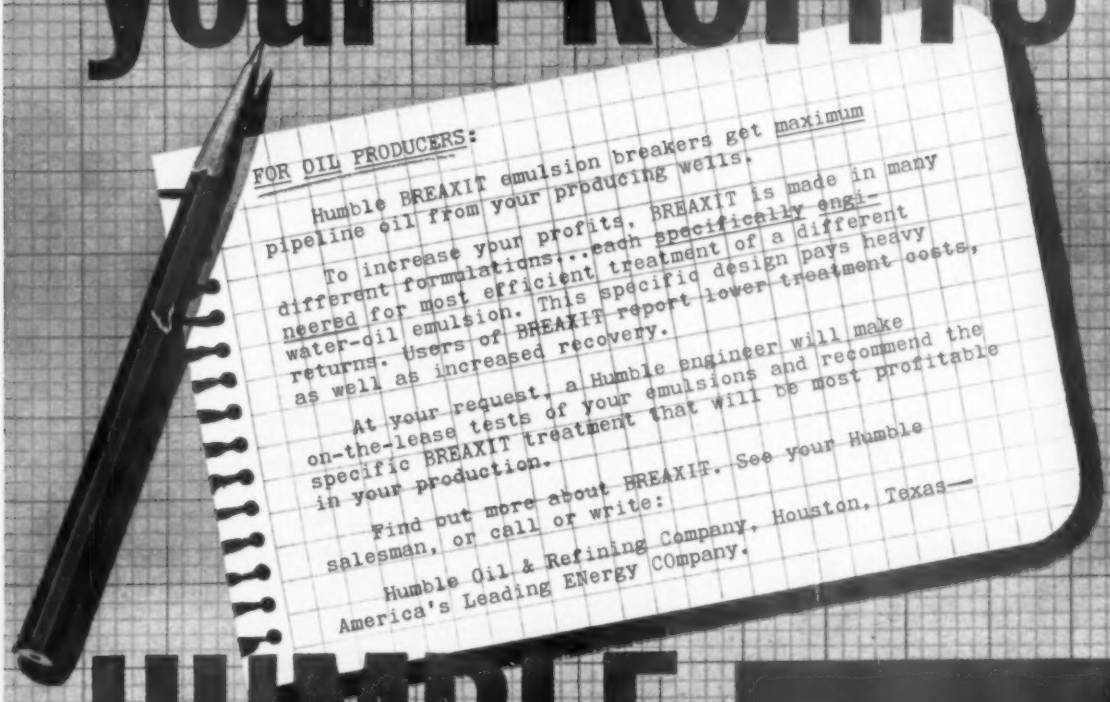
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W. H. Siems R. M. Holliday

W. H. SIEMS, vice-president, sales, for Hughes Tool Co., Houston, has been elected a director, and **RAYMOND M. HOLLIDAY,** vice-president, finance, and a director, has also been elected secretary of the corporation. Siems and Holliday succeed **Chester S. Johnson,** who is retiring as vice-president, director, and secretary. Siems, who has been with Hughes for the past 35 years, directed the company's export sales from offices in New York, for 25 years before he transferred to Houston in 1949 as general sales manager. He was promoted to vice-president, sales, in 1959.

F. J. DOSSMAN is the new manager of advertising for OPW Corp., Cincinnati. Dossman joined OPW in 1959, and before that he was located at the Cincinnati district sales office of Ford Motor Co.

DEAN KING and **JOHN H. HAND** will supervise a new sales and service office at Casper, Wyo., recently opened by the oilfield division of Hagan Chemicals & Controls, Inc. King will be in charge of sales activities, and Hand will provide water treatment consultation. King, who joined Hagan in 1957, served two years as a service engineer for Hagan's Hall Laboratories before becoming a district sales engineer in 1959. Hand, who joined Hagan's Bradford Laboratories, in 1955, was most recently district manager of Bradford's Huntington (W. Va.) office.

DAN L. McGURK has been named director of marketing for TRW Computers Co., Beverly Hills, Calif., the industrial control computer division of Thompson Ramo Wooldridge, Inc. McGurk will supervise sales offices in New York, Chicago, Houston, and Los Angeles, as well as advertising, public relations, market research, and related marketing activities. TRW Computers markets the RW-300 digital control computer, designed specifically for industrial process control. McGurk, who joined the company in 1958, has been sales manager since 1959.

J. M. (Pepe) ESTROP has been named exclusive representative for all Gardner-Denver Co. petroleum industry products in Mexico, with offices at Mexico City. The Gardner-Denver line of drilling equipment includes drawworks, crown blocks, traveling blocks, rotary tables, compounds, and other components for a complete oil rig. Estrop was formerly manager of Cia. Pan Americana Comercial, S.A., a machinery company; material agent for Petroleos Mexicanos; and material superintendent for Cia. Mexicana de Petroleo-El Aguila.

STURGIS L. STENTZ is manager of Ralph M. Parsons Co.'s newly created petroleum automation department, with offices in Los Angeles. The company is expanding its services to the petroleum industry to include automated production and transmission systems. Stentz, who has had more than 20 years' experience in the design and installation of petroleum production facilities, was involved in the development of the single-tank system of lease production. He has been associated with National Tank Co. and Sargent Engineering Corp., and has operated his own company specializing in lease automatic custody transfer equipment.

S. L. Stentz H. E. Midkiff

HOWARD E. MIDKIFF is the new sales manager for Cal-Metal Pipe Corp. of Louisiana, Baton Rouge, succeeding **Kenneth S. Bayless,** who recently became executive vice-president of the company. Midkiff was formerly Tulsa district sales manager for the company.

GEORGE T. MAYS has been appointed sales representative for Mission Mfg. Co.'s oilfield products in New Orleans and the surrounding area. Before joining Mission, Mays was associated with Magnet Cove Barium Corp. in Louisiana, serving as a sales and service engineer.

CAROL A. MUNDT moves up to director of industrial relations for ACF Industries, Inc., with offices in New York. Mundt, who joined ACF in 1953, was most recently manager of labor and employee relations.

DR. S. PAUL MALCHICK has joined Nalco Chemical Co.'s exploratory research department as technical specialist, in Chicago. He was formerly a group leader for Standard Oil Co. (Ind.), at Whiting, Ind.

ATLAS BRADFORD CO., Houston, has been appointed distributor of oil country tubular goods manufactured by Colorado Fuel & Iron Corp., Pueblo, Colo. Distribution will be through Atlas Pipe Inc. and Bradford Supply Co., Atlas Bradford divisions. Atlas Pipe maintains shops and storage yards in Houston and Corpus Christi, and handles sales for Oklahoma and Kansas through a district office in Tulsa. Bradford Supply has oilfield supply stores in states east of the Mississippi River, and in Texas, Oklahoma, and Kansas.

JOE THOMPSON has been appointed division manager for the sales activities of American Iron & Machine Works, Inc., in Midland, Tex., American Iron's North and West Texas districts and Dallas-Ft. Worth area have been combined into this new division. Thompson has been with the company for the past 13 years. **David Beachum,** who formerly represented American Iron in Wichita Falls, Tex., and in Canada, rejoined the company as special representative in the Dallas-Ft. Worth area.

LEN E. BROCK has been named sales and service engineer in the Permian Basin area for Grove Valve & Regulator Co., with offices in Odessa. He was formerly associated with Burt Tank Separator & Oil Treating Corp. **Robert Churnside** has also joined Grove as a sales engineer. He will cover the midwestern states from offices in Chicago. Churnside was formerly with F. H. Maloney Co., in Houston.

ZACK GRIFFIN is the new Permian Basin area manager for Johnston Testers, Inc., with offices in Odessa. He will be in charge of the company's operations in West Texas and Eastern New Mexico. Griffin has been a sales engineer in Oklahoma City for Johnston, assistant division manager in Denver, and, most recently, administrative assistant at the company's headquarters in Houston.

E. L. Paramore T. Phillips

E. L. **PARAMORE,** formerly southern region vice-president for Halliburton Co., in Duncan, Okla., is now vice-president in charge of the central region, at Duncan, and **TRAVIS PHILLIPS** assumes responsibility for the southern region as regional manager. Paramore succeeds **D. R. Yager,** who is retiring. Phillips moves to Duncan from Shreveport, La., where he was formerly division manager. **C. L. Fulton,** formerly assistant division manager at Midland, Tex., succeeds Phillips at Shreveport, and **F. C. Moody,** assistant division manager at Denver, succeeds Fulton at Midland. **C. L. Bramlet** transfers from Corpus Christi to Denver as assistant division manager.

Memo to Management:

TO PUMP OR NOT TO PUMP *EFFICIENTLY* IS THE QUESTION and PEPA has the answer

The question of dependable, efficient power for oil field pumping has been answered time and again with economical utility electric power. In most instances there is no substitute for the savings in maintenance, money and manpower provided through the use of purchased electric power. And this record of efficiency is not restricted to any one section of the petroleum industry. From the oil fields to the refinery it will pay you to investigate possible savings you may derive. Contact your Utility Electric Power Company for details.

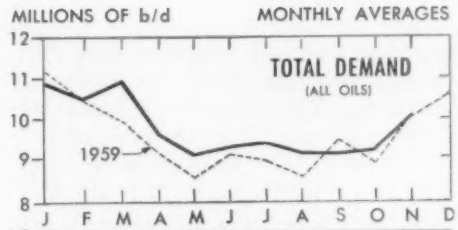
A list of P.E.P.A. members will be furnished on request

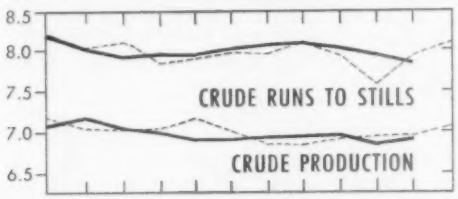
PETROLEUM ELECTRIC POWER ASSOCIATION

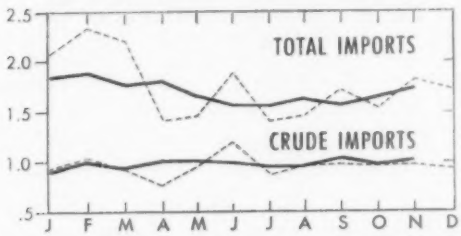
BOX 35006, DALLAS 35, TEXAS

PETROLEUM WEEK'S

Fingertip Figures







Figures for period ended Jan. 6, except as noted

RUNS TO STILLS

Latest week	8.167
Previous week	8.245
Year ago	8.396

CRUDE PRODUCTION

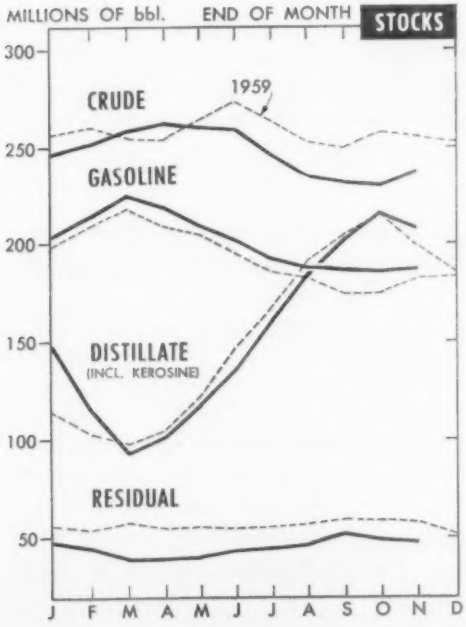
Latest week	7.165
Previous week	7.173
Year ago	7.112

TOTAL IMPORTS

Latest week	1.917
Previous week	1.861
Year ago	1.651

CRUDE IMPORTS

Latest week	1.184
Previous week	1.038
Year ago	.758



CRUDE STOCKS

Week-ended Dec. 31	238.7
Previous week	236.9
Year ago	252.9

GASOLINE

Latest week	199.9
Previous week	195.7
Year ago	193.9

DISTILLATES

Latest week	166.1
Previous week	174.3
Year ago	171.0

RESIDUAL

Latest week	45.0
Previous week	46.1
Year ago	52.4

Supply-Demand Figures for December

(millions of b/d)

	December 1960	% Change from year ago	12 Months 1960	% Change from year ago
Total Demand (Inc. Exports)	11,244	+ 2.0	9,841	+1.9
Gasoline	3,998	— 1.1	4,170	+1.4
Distillates (Inc. Kerosine)	3,550	+12.2	2,252	+4.9
Residual	1,746	— 9.8	1,553	—3.1
Total Supply	9,805	— 2.9	9,748	+0.4
Domestic Crude	7,138	— 0.8	7,021	—0.5
Nat. Gas Liquids	900	— 4.3	925	+5.2
Total Domestic	8,038	— 1.2	7,946	+0.2
Crude Imports	962	— 6.5	1,022	+5.8
Total Imports	1,767	—10.2	1,802	+1.2

Total demand for all oils last year averaged 9,841,000 b/d, a growth of 1.9% over 1959.

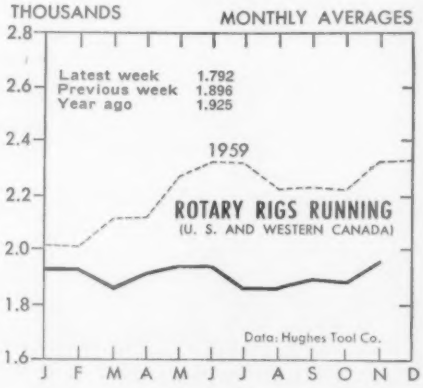
The volume, based on preliminary figures, is closely in line with earlier industry forecasts (PW—Dec.30'60,p13).

The biggest increase for the year occurred in demand for distillates, which averaged 2,252,000 b/d, or 4.9% over the previous year. A major factor was the cold weather that persisted throughout December. Demand for distillate fuels in December averaged a healthy 3,550,000 b/d, or 385,000 b/d higher than in December, 1959.

Close tabs on refinery operations during most of 1960 kept stock-building in check.

Runs to stills last year were held to an average of 8,066,000 b/d, up 0.9% over a year ago.

Consequently, inventories of major products increased by a relatively slim 1.8-million bbl. Stocks of both distillates and residual fuel closed the year at a lower level than in 1959.



The Market Trend

It Almost Seems Like the Good Old Days

Suddenly the boom is on again. How long it will last is anybody's guess. There hasn't been anything like it since Suez, and oil men all agree it's lovely.

Many of the signs of old-time prosperity are back again. Ship rates are strong. Discounts are on the wane. Important supply areas are sold up for prompt cargo lifting. And buyers who haven't been seen in a couple of years are coming out of hiding. Maybe it's wishful thinking, but you're beginning to hear shortage talk on residual for the East Coast this February.

The cold weather in the U.S. early in the winter certainly helped matters. There has been a huge, early drain on stocks of distillates. Last week, No. 2 fuel prices bounced up 0.25¢ in Chicago and at the Gulf, and 0.5¢ along the East Coast. The bulls in the market say there is more of the same to come.

And the weather pushed U.S. clean tanker rates to a high of more than a year's standing. The last paid No. 2 fuel voyage, Gulf to New York, ticked off at "plus 35%." In only two months in the past year have clean rates got into the plus column at all.

But this efflorescence is not confined to the U.S. It's suddenly—in the past two weeks—a world-wide affair. Europe is short of gas oil, and buyers have been reaching to the Caribbean to fill out their supplies. In the last week, about 0.625¢ a gal. of discounts have evaporated from Caribbean prices for distillates. Kerosine is nearly at full posted.

And it's hard to believe, but the Persian Gulf is just about sold out of products for the next 30 days. A tip-off to this position came last week when Far East marketers started chartering tankers to load at Talara, Peru, and Aruba, N.W.I. They wouldn't reach that far for supplies unless nearer areas were dried up.

Everything in the line of products—for the moment—looks rosy.

Esso Lubes Up: Esso Standard division of Humble has advanced its prices for motor oils by amounts up to 12¢ a gal. This represents the first increase in Esso's motor oil prices in more than four years.

A Big Charter: The Military Sea Transportation Service signed up for a good-sized charter last week. It took the 65,000-ton tanker National Defender for five voyages from the Persian Gulf to the Far East.

The vessel will work in Navy Special fuel oil. The carrying rate is slated at an average of "minus 47.3%."

JP-4 Opening: Esso and American Oil Co. were the only two suppliers to offer against the military's request for 17.6-million gal. of JP-4 fuel for delivery before Mar. 31.

Amoco offered 5-million gal. at 9.5¢, and 4.4-million gal. at 9.9¢, f.o.b. River Rouge, Mich. Esso quoted 8.8¢ on 5-million gal., f.o.b. Baton Rouge, La.

The Market Place

AROUND THE WORLD

Prices compiled for PETROLEUM WEEK by Platt's OILGRAM Price Service and National Petroleum News, McGraw-Hill Publications

All prices as of January 9

Bold face type indicates changes from previous week

KEY PRICES—REFINED PRODUCTS

(¢ per gal. except dollars per bbl. where $ is shown)

Western Hemisphere

U.S. Gulf Coast, cargoes
- Gasoline, 98 oct prem. 12.25-13.25
- Gasoline, 92 oct reg. 11.25-11.5
- **Kerosine 9.5↑-10**
- **Heating oil, No. 2 8.75↑-9.25↑**
- **Gas oil, 48-52, d.i. 9↑-9.25**
- Fuel oil, bunker "C" $2.30-2.40

Caribbean, cargoes
- Avgas, Grade 100/130 14.75
- Gasoline, 93 oct research prem 11
- Gasoline, 87 oct research reg. 9.875-10
- Gasoline, 80 oct research 9.125-9.25
- Gasoline, 70-72 oct motor method 9
- Kerosine 9.5
- Heating oil, No. 2 8.375
- Gas oil, 48-52 d.i. 8.625
- Fuel oil, bunker "C" $2.00

New York Harbor, barges
- **Kerosine 10.9↑-11.15↑**
- **Heating oil, No. 2 9.9↑-10.15↑**
- Fuel oil, No. 6 $2.62

Okla.-Group 3, northern shpt., bulk
- Gasoline, 91 oct reg. 12.5-13.25
- Kerosine 11-11.125
- Heating oil, No. 2 9.5-9.75
- Fuel oil, No. 6 $1.80-1.90

Chicago, bulk
- Gasoline, 92 oct reg. 12.625
- **Heating oil, No. 2 10↑-11.35**
- Fuel oil, No. 6 high sulfur 7.65

Los Angeles, rack
- Gasoline, 88 oct reg. 11-12.65
- Diesel fuel, PS 200 7.75-11.25
- Light fuel, PS 300 $2.90
- Heavy fuel, PS 400 $2.05-2.45

Natural Gasoline, Grade 26-70
- FOB Group 3 4.5
- FOB Breckenridge, Tex. 4

LP-Gas
- Propane, Oklahoma (Group 3) 4.5-5
- Propane, Baton Rouge 5.625

Pennsylvania Lubes
- Bright stock, 25 p.t. 25
- 200 vis. neutral, 25 p.t. 28

Mid-Continent Lubes, Tulsa basis
- Bright stock, solvent, 95 v.i. 26-27
- Neutral, solvent, 200-210 vis. 23-24

Gulf Coast Lubes
- Bright stock, solvent, 95 v.i. 26-27
- Neutral, solvent, 200 vis. 23-24

Eastern Hemisphere

Singapore (Pulau Bukom) cargoes
- Avgas, grade 100/130 15.5
- Gasoline, 79 oct research 9
- Kerosine 9.625
- Gas oil, 48 d.i. minimum 9

KEY PRICES—CRUDE OIL

(2¢ differential per deg. of grav. applies except as noted)

Western Hemisphere

United States (at the well)
- Mid-Continent, (Okla.-Kan.), 36.0-36.9 $2.69-2.97
- North Dakota, 36.0-36.9 2.47-2.87
- Texas:
  - Gulf Coast, low cold test, 26.0-26.9 3.50
  - Gulf Coast, Upper & Lower, 26.0-26.9 2.92-3.22
  - West Texas, sweet, 36.0-36.9 3.00
  - West Texas, N.M., inter., 36.0-36.9 2.93
  - West Texas, N.M., sour, 32.0-32.9 2.71
  - East Texas, flat 3.05-3.25
  - Mirando, 28.0-28.9 2.96-3.31
- **Illinois Basin, flat 3.00↓**
- Pennsylvania Grade, Bradford dist., flat 4.80
- California, Signal Hill, 21.0-21.9 2.33†
- North Louisiana-Arkansas, 36.0-36.9 2.72-3.02
- Wyoming, sweet, 36.0-36.9 2.85-2.90
- Wyoming, sour, 32.0-32.9 2.63-2.71

Canada (flat prices, at the well)
- Pembina (Alta.) $2.38
- Leduc-Woodbend (Alta.) 2.53
- Redwater (Alta.) 2.42
- Steelman A (Sask.) 2.425
- Virden (Man.) 2.285

Venezuela (Cargoes, FOB lifting port designated)
- San Joaquin, 41.0-41.9, Puerto la Cruz $3.10
- Oficina, 35.0-35.9, Puerto la Cruz 2.80
- Tia Juana, Medium, 26.0-26.9, Amuay 2.30
- Bachaquero, flat, La Salina 1.85
- Lagomar, 31-31.9, Cardon 2.55
- Lagunillas Heavy, flat, La Salina 2.07

†*Differential per deg. of grav. varies*

Eastern Hemisphere

Middle East, Persian Gulf (Cargoes, FOB lifting port)
- Arabia, 34.0-34.9, Ras Tanura $1.80
- Safaniya, 27.0-27.9, Ras Tanura 1.47
- Iran, 34.0-34.9, Bandar Mashur 1.78
- Iran, 34.0-34.9, Abadan 1.73
- Iraq, 35.0-35.9, Fao 1.72
- Kuwait, 31.0-31.9, Mina-al-Ahmadi 1.59
- Qatar, 41.0-41.9, Umm Said 1.95
- N. Zone, Burghan, 23.5-24.4, Mina Saud 1.48
- N. Zone, Ratawi, 23.5-24.4, Mina Saud 1.41
- N. Zone, Eocene, 16.5-17.4, Mina Saud 1.28

Middle East, Eastern Mediterranean
- Arabia, 34.0-34.9, Sidon $2.17
- Iraq, 36.0-36.9, Tripoli, Banias 2.21

North Africa, Phillipeville, Algeria
- Hassi Messaoud, 48 and above Withdrawn

KEY TANKER RATES

(Last paid, per long ton, single voyage)

- **U.S. Gulf-New York, clean (USMC+35%) $3.85↑**
- **U.S. Gulf-New York, dirty (USMC+20%) $3.42↑**
- **NWI-USNH, dirty (USMC—40%) $1.65↓**
- NWI-UK/Cont., dirty (Scale+30%) 22/11*
- **Persian Gulf-UK/Cont., dirty (Scale—40%) 35/7*↓**
- Persian Gulf-USNH, dirty (USMC—42½%) $6.84

**Sterling*

J. HOWARD MARSHALL has been elected president and chief executive officer of Union Texas Natural Gas Corp., Houston. He succeeds **Richard T. Lyons**, who is retiring, but will continue to serve the company as a director, a member of the executive committee, and a special consultant. Union Texas Natural Gas resulted from a merger of Texas Natural Gasoline Corp. and Union Oil & Gas Corp. at the beginning of last year. Marshall was most recently executive vice-president and a director of Signal Oil & Gas Co., Los Angeles, and for many years was in charge of its Mid-Continent exploration activities in Ft. Worth. He is also a past president of Ashland Oil & Refining Co.

J. H. Marshall

E. R. Jones

E. R. JONES has been promoted to vice-president of manufacturing for Derby Refining Co., Wichita, Kan., division of Colorado Oil & Gas Corp. Jones, who joined Derby in 1939 as assistant refinery superintendent, moved up to refinery superintendent in 1948. He has been refinery manager for Derby since 1958. **C. J. Carle** moves up to industial relations manager for Derby's manufacturing and pipeline departments. He has been with Derby for the past 19 years, and was most recently refinery personnel manager.

ROBERT R. CHASE has been appointed assistant to the senior vice-president of Texaco Inc., **Theodore A. Mangelsdorf.** Chase moves to New York from Houston, where he has been on special assignment with the refining department since last April. He joined Texaco in New York as a chemical engineer in 1941, and has served at the company's refineries at Tulsa and Lawrenceville, Ill. In 1954, Chase was named assistant superintendent of the El Paso (Tex.) refinery, and became superintendent there in 1958.

ROBERT O. ANDERSON, president of Hondo Oil & Gas Co., Roswell, N.M., has been named chairman of the Federal Reserve Bank of Dallas. He has been a member of the bank's board since January, 1960. **Morgan J. Davis**, president of Humble Oil & Refining Co., was named a director of the bank for a three-year term.

D. O. POPOVAC has been promoted to assistant superintendent of Continental Oil Co.'s new industrial alcohol plant at Lake Charles, La., which is scheduled for completion by late summer. Popovac, who joined Conoco's research staff at Ponca City, Okla., in 1949, was most recently superintendent of its research and development process laboratory there.

FRED E. BUCHANAN, formerly administrative assistant to the management of Sun Oil Co.'s Gulf Coast production division, in Beaumont, Tex., is now executive assistant to the division manager there. Buchanan, who has been in the Sun's Gulf Coast division for the past 12 years, became a petroleum engineer there in 1951, a senior petroleum engineer in reservoir study in 1955, and administrative assistant in 1958.

E. C. WALTER has been appointed manager of marketing for Continental Oil Co.'s 12-state northern region, with headquarters in Kansas City, Mo. He has been assistant general manager of marketing for Conoco at Ponca City, Okla., since 1953, and before that was division manager for Conoco in Chicago and Kansas City. In his new position, he succeeds **S. N. Bell**, who recently transferred to Denver as manager of marketing for the Rocky Mountain region.

W. M. JACOBS is the new president of Pacific Lighting Gas Supply Co., Los Angeles, succeeding **Robert A. Hornby**, who has been elected chairman. Hornby, who will continue as president of the parent Pacific Lighting Corp., succeeds **Robert W. Miller**, who remains as chairman of the parent company. Miller and Hornby will be involved in the problems of the integrated Pacific Lighting system. Jacobs, who has been in the Pacific Lighting group for more than 30 years, was elected senior vice-president of the subsidiary in 1958, and has been a vice-president of the parent since 1956, a position he will continue to hold.

T. N. ANDERSON has joined Harbur Terminal Co., in Texas City, Tex., as vice-president and secretary-treasurer. Anderson has been secretary-treasurer for Sid Richardson Refining Co., in the same city, for the past 14 years.

ROBERT E. RETTGER is the new chief geologist for Sun Oil Co.'s southwest production division, with headquarters in Dallas, succeeding **Francis E. Heath**, who is retiring as agent and chief geologist for the division. **Wallace Ralston**, who is now assistant chief geologist, operational, in Dallas, will also assume Rettger's former duties as assistant chief geologist, technical.

R. E. Rettger

R. W. Stoneburner

ROGER WHITNEY STONEBURNER has joined Southern Natural Gas Co. as manager of exploration, with offices in Houston. He was formerly vice-president and manager of San Jacinto Oil & Gas Co., Houston. He has also held various positions with The California Co. in its geological and geophysical departments. In his new position, Stoneburner will be responsible for the geological and geophysical activities of Southern Natural Gas.

GEORGE W. BURGESS has been named district manager in New Orleans for Kern County Land Co. The company's activities in Louisiana and Mississippi have been consolidated under Burgess, and its Jackson (Miss.) office has been closed. **Robert E. Horton**, formerly in Jackson, has been transferred to New Orleans as district geologist. **James E. Grady** and **Justin Hall** have joined the new district staff. They were formerly associated with Monterey Oil Co. Grady will be district landman, and Hall will be district geologist for Louisiana. **Donald G. Cook** is the new district manager of exploration and development in the Permian Basin of West Texas and southeastern New Mexico, with offices in Midland. **C. W. Braddy** has been transferred from

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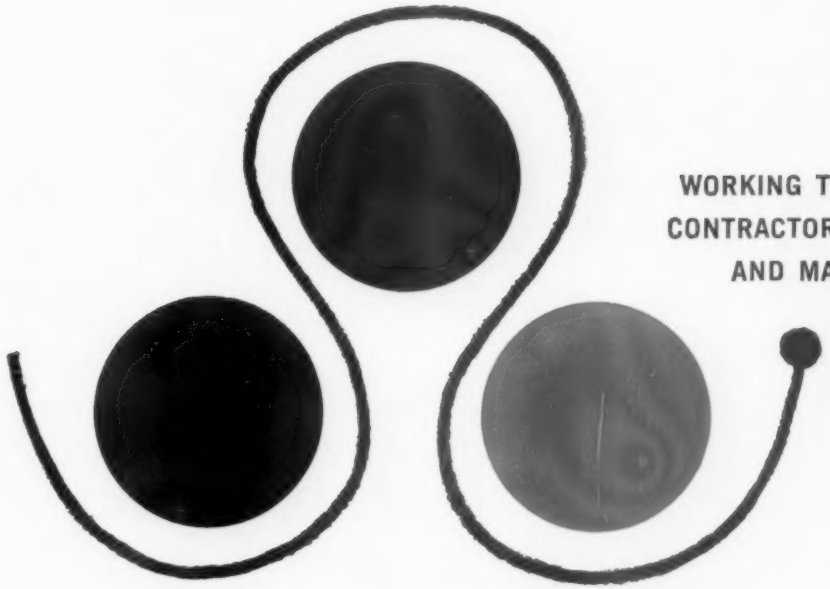

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Kern County's Albuquerque (N.M.) offices and becomes district landman at Midland. **John S. Baker,** district geologist at Albuquerque, moves up to manager of the Four Corners district there. **G. H. Castle, Jr.,** formerly supervisor of oil land records in Kern County's San Francisco headquarters, was named district landman for the Four Corners district. Each of the districts is under the over-all supervision of exploration manager **R. G. Reese,** in San Francisco.

WILLIAM NADEN, executive vice-president of Humble Oil & Refining Co., Houston, will serve as chairman of the Public Relations Advisory Committee of the National Assn. of Manufacturers during 1961. Naden has been a director of NAM for the past two years, and became a member of the public relations advisory committee last year.

HOWARD E. KIRBY, JR., has been named assistant supervisor for Texas Eastern Transmission Corp.'s engineering plans and research division, with offices in Shreveport, La. Kirby, who joined the company in 1948, became an assistant engineer in 1951. In 1958 he was transferred to the design and construction division and was in charge of the gas turbine section. The following year he was transferred to the plans and research division and promoted to engineer, his most recent assignment.

DANIEL H. MEYER has been elected president for 1961 of the Utah Assn. of Petroleum Landmen. He is executive vice-president and general manager of Great Yellowstone Corp., an independent oil and mining company in Salt Lake City. Other new officers of the association are: **John Arders,** Standard Oil Co. of California, vice-president; **Robert Leech,** California Standard, secretary; and **Orrin Arnold,** Humble Oil & Refining Co., treasurer.

PHIL H. GARRISON is the new exploration superintendent for Pan American Petroleum Corp.'s Rocky Mountain division, at Casper, Wyo. He replaces **L. C. Adams,** who has moved to Pan Am's general offices in Tulsa, as manager of exploration. Garrison, who joined the company in 1939, has held positions at Pan Am locations in Texas, Oklahoma, Louisiana, and Canada. In 1957 he was appointed geophysical supervisor for the company at its Tulsa headquarters, and in 1959 he was named district exploration superintendent for the New Orleans district, his most recent position.

P. H. Garrison

W. H. Swinbank

WILLIAM H. SWINBANK has been named assistant manager of the supply and distribution department of La Gloria Oil & Gas Co., Houston, subsidiary of Texas Eastern Transmission Corp. He will be responsible for products supply activities for La Gloria's plants and terminals, and for the sales and purchases of LPG at company plants. Swinbank has been with the company since 1949.

CLYDE A. WHEELER, a former staff assistant to President Eisenhower, has joined Sunray Mid-Continent Oil Co., in Tulsa, as public affairs representative. Wheeler will serve as company representative in those governmental matters which directly affect the company at both state and federal levels. He will be available to all operating departments of Sunray Mid-Continent, and will report directly to the president. Wheeler was recently defeated in a bid to be U.S. Representative from Oklahoma's sixth congressional district.

L. C. BURROUGHS, assistant to the vice-president, manufacturing, of Shell Oil Co., has joined the American Petroleum Institute as consultant on air and water pollution. He has been made available to API on a full-time basis until his retirement from Shell at the end of 1962. In his new position, Burroughs will advise API on proposed legislation affecting the oil industry that involves water-pollution abatement at the municipal, state, and federal levels. He will also serve as executive secretary of the API smoke and fumes committee.

CHARLES F. SCOTT has been appointed general manager of the marine transportation department of Socony Mobil Oil Co., New York. He was formerly marine coordinator of Standard-Vacuum Oil Co.

F. R. SMITH moves up to manager of the newly created head office credit and banking department of Shell Oil Co. of Canada, Ltd., with offices in Calgary. Smith joined Shell in Vancouver in 1952 as credit manager of the western division. In 1956 he moved to Toronto as treasury manager of the company's central division, and in 1959 was named assistant to the treasurer.

H. WALTON MUSICK has been appointed director of purchases for Kerr-McGee Oil Industries, Inc., Oklahoma City. He was most recently assistant director of purchases, and has been manager of the company's office services department.

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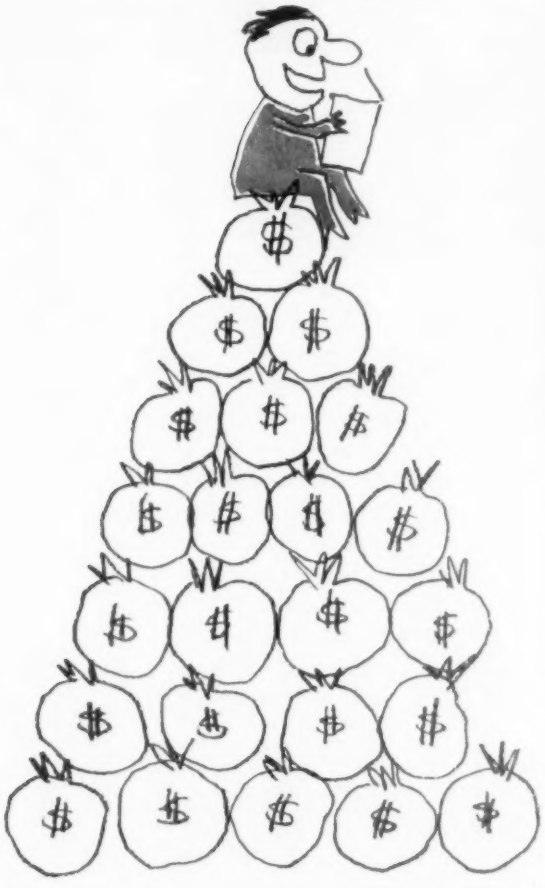

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Is a New Horizon in Sight?

IN RECENT WEEKS, two professors have come up with some advanced thinking on oil and gas accumulations in basement rocks, and the migration tendencies of petroleum hydrocarbons.

Their theories are a bit too technical to discuss here and now—but the implications and potentials are broad enough to merit comment, and a modest ripple of excitement.

In brief, both gentlemen believe that oil and gas explorers are missing good bets in overlooking the possibilities of oil and gas deposits in basement rocks.

THIS IS NEAR-HERESY for conventional geologic concepts. These hold that the jig is up when the drill bit grinds into these formations. There are, of course, exceptions here and there, but the general idea is that basement rocks are "suitcase sandstones"—when you hit 'em, you pack up and go.

The two theorists are the University of Michigan's K. K. Landes and the Missouri School of Mines' H. M. Zenor. Landes is a geologist, Zenor a geophysicist.

Landes, and a team of student colleagues, reached a conclusion recently that known oil deposits in basement rocks "aren't freaks, to be found by chance [but are] normal concentrations of hydrocarbons, obeying all the rules of origin, migration, and entrapment." It was suggested that oil men make a systematic search of basement rocks in "all suitable areas."

Zenor, in a separate piece of thinking, carries this premise a step further with his theory on the migration and accumulation of hydrocarbons. He believes that hydrocarbon deposits aren't necessarily confined to sedimentary basins, but are transported through subsurface land masses by temperature differentials and pressures. Thus, he reasons, they can be entrapped anywhere, including basement rock formations. This, in effect, not only supports but extends the Landes projection.

It is conceded that many geologists won't go for this at all. In fact, some will probably get violent about it. But we're not interested in taking sides. We're only thinking out loud that progress often stems from theory—and that, not too many years ago theory helped to explode the old anticline concept that you had to have a subterranean bump before you could find oil or gas.

WHAT THIS COULD MEAN to the industry, however, is that the oil and gas potentials of this country might be a lot greater than present evidence indicates. Not only is this most encouraging, coming as it does at a time when many oil men are bemoaning the "declining" potential of oil exploration in the U.S., but also it's a hopeful harbinger for the future. That, we like.

new Dowell acidizing aid boosts production–improves success ratios

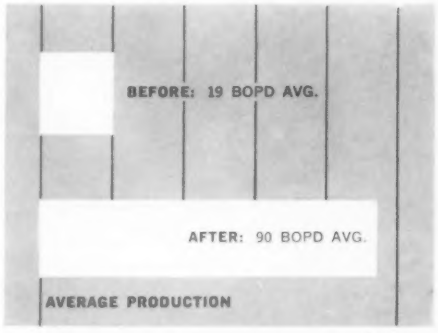
Slugs of gelled water injected between batches of acid are effective temporary plugs when acidizing long pay sections. Here are results from 21 wells.

Operators in many areas have found that Dowell water gels provide an economical temporary plug for use in the selective acidizing of long pay sections. These gels contain a breaking agent which causes the gelled water to revert to a thin liquid, primarily by hydrolysis. Breakdown time varies with gel concentration, the presence of acid, and temperature. Overall treatment cost to the operator is often unusually low for the production improvement realized.

As an example, 21 oil wells in the delta area of South Louisiana were acidized using slugs of water gel between stages of acid. Production was from a series of dirty, poorly consolidated Miocene sands interbedded with silt, clay and mudstone. Depths of these wells ranged from 6400 to 11,000 feet. Here is a tabulation of results from all 21 wells:

WELL NUMBER	LOCATION	PRODUCTION BEFORE TREATMENT, BOPD	PRODUCTION AFTER TREATMENT, BOPD
1	WEST DELTA	8	8
2	WEST DELTA	63	312
3	WEST DELTA	0	17
4	WEST DELTA	41	144
5	WEST DELTA	30	216
6	WEST DELTA	42	140
7	WEST DELTA	0	223
8	WEST DELTA	35	108
9	WEST DELTA	60	203
10	WEST DELTA	0	30
11	WEST DELTA	20	22
12	WEST DELTA	24	24
13	WEST DELTA	7	35
14	DELTA FARMS	0	0
15	DELTA FARMS	0	300
16	STELLA	0	20
17	GRAND BAY	0	0
18	EAST BAY	22	35
19	EAST BAY	17	25
20	EAST BAY	3	0
21	MAIN PASS	26	32

Length of perforated intervals treated ranged up to 50 feet. Some treatments used as many as four stages of acid separated by three water gel slugs. Quantities and number of stages were engineered to meet well conditions.



Out of the 21 treatments, 15 showed a definite improvement. The success ratio of 71.5 per cent and the average production increase of 370 per cent were both considered excellent.

As shown above, this water gel, made from water and a Dowell addition agent, is free of solids. It serves well as a temporary plug, yet it thins readily. Viscosity can be tailored to suit well conditions.

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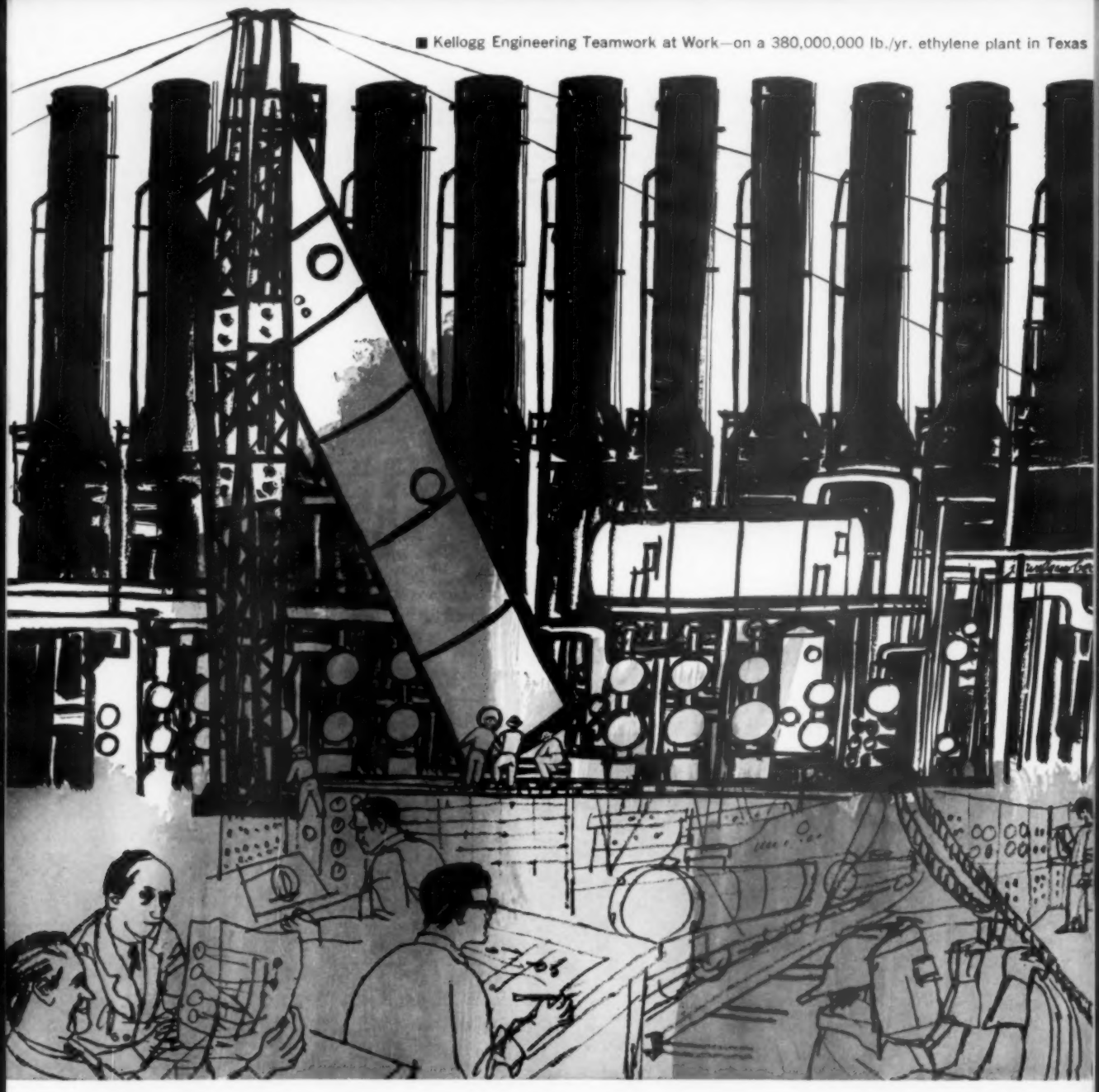

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